

# Railway Age

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## Teaching the Motorist to Observe Signals

ON the average of once each day a motor vehicle crashes into lowered highway crossing gates on the Long Island Railroad, breaking the gates and completely setting at naught the protection which they are supposed to provide against possible collision, both for the user of the highway and for the company's trains. In 1924 ninety-one persons were killed or injured at highway crossings on the Long Island. These figures are startling for such a small road, but, since traffic both on highways and the railway is particularly dense in its territory, they do not probably reflect a situation strikingly different from that in other parts of the country. They do, however, make plainly evident the difference between the traffic on road and rail. On the latter the personnel is trained and instructed in the principles of safety. There are, for instance, few enginemen who remain long in service who do not learn to stop when a stop signal is displayed or who—even worse—occasionally demolish a "smash board" installed as an extra precaution at a fixed signal. Such drivers, on the other hand, are not at all unusual on the highways. Apparently discipline on the highways is somewhat lax. Perhaps what is needed are some energetic officers who will conduct a few "surprise tests" on the highways to eliminate the unsafe drivers as they are eliminated on the railroads.

## What Does the Stop Sign Say?

THE state of Oklahoma has enacted a law requiring that all automobiles shall be stopped before crossing a railroad; and the question of its reasonableness and to what extent it is, or ought to be, obeyed is under discussion. One leading paper, the Tulsa World, comes out squarely for relieving the police authorities entirely from responsibility for taking action in the premises. In other words, the stop sign at a crossing is exactly on a par with "TRESPASSING FORBIDDEN," the familiar adjuration often seen posted on a vacant piece of ground, as, for example, a corner lot in a city. There being no fence around the lot, and no visible obstacle to hinder the pedestrian, people in many cases continue to use it as a cross-cut the same as if no warning had been posted. The only legal effect of the notice is to put the burden of proof more certainly on the trespasser, in case any controversy should arise. Well, it may possibly be useful to have such a situation at grade crossings. It is regrettable to have to have a weighty legal question, which may involve life and death, together with large pecuniary issues, placed on a level with petty situations in which the statutory requirements are never expected to be tested in actual litigation unless it be for some secondary purpose. In railroad operation it is a familiar maxim that "a rule which cannot be enforced ought not to exist." Possibly Oklahoma may

develop a public sentiment which will educate the rest of us. The experiences of the people in those southeastern states which have had stop laws on their statute books during the past few years seem not as yet to have had much educational value in other parts of the country. Meanwhile every normal person knows how to cross a railroad, anywhere, on any proper occasion, in perfect peace and safety; and the A. R. A. committee is doing its best to awaken those who are not normal.

## A Welcome Change in Attitude

STRONG evidence that recognition of the fact that freight rates have little effect upon the condition of business is becoming prevalent is contained in replies to a questionnaire distributed by F. E. Gunter, president of the Liberty Central Trust Company of St. Louis, Mo., to 200 bankers in Illinois, Missouri, Arkansas, Oklahoma, and Texas. In response to an inquiry as to what they consider the principal obstacles to business in their territories, not one of the bankers made any reference to "high freight rates." It is certain that not long ago a considerable proportion of these bankers, all of whom are located in the smaller communities and are close to agriculture, would have called "high freight rates" a serious obstacle to business prosperity. It is significant, also, that most farm publications are beginning to recognize that freight rates are not an important factor in determining the price of agricultural commodities and the net return from their sale. The reasons for these changes are the educational work the railways have done and the quality of the transportation service which the railways have been providing. This better service is one of the greatest benefits conferred on agriculture and other industry in many years. It is gratifying that the effort expended to bring about this perfection of service has not been wasted and that it has brought home to a large part of the public the fact that efficient transportation service is its greatest need, compared to which a small difference in the rates charged is inconsequential.

## A Union Wakes Up

THE official protest of the Brotherhood of Locomotive Engineers against the issuance of a permit to a bus company to operate a bus line paralleling a railway is evidence that there has dawned in the engineers' minds a recognition of the fact that this is a subject that concerns them. No one has more to lose through bus competition than the employees, particularly those in train and engine service. The effect of bus competition is shown day after day in the declining local passenger business of the railways, and in the abandonment of the operation of local passenger trains. The employees suffer along with the railways. The problem of bus competition is therefore

their problem as well as that of the managements. Numerous instances have been observed of the efforts of individual employees to help deal with the situation, but this protest of the Brotherhood of Locomotive Engineers seems to be the first official action of the sort. It must be frankly recognized that there are many conditions under which bus transportation is desirable and beneficial; but it should not be allowed to compete with railway transportation except on terms and under regulation that will make the competition fair to both competitors and to the public. Buses are destined to play an important place in transportation. It is very important that this fact be recognized. Any attempt to deny it will be futile. But bus transportation must be conducted on the same regulated basis as railway transportation. Today it is often not so conducted, and it is therefore often unfair and unjustified. The unfair features of bus competition will not eliminate themselves; they will be eliminated, if at all, only after a hard fight. The chances of success will be increased if the brotherhoods will join actively with the railways. Their mutual welfare demands that this be done.

### *The Stabilization of Maintenance*

**T**HERE is an old adage to the effect that in time of peace prepare for war. With equal accuracy a railway man may well say "In summer prepare for winter." This is particularly true of maintenance of way work because of the marked effect which climatic conditions exert on the activities of this branch of railway service. What will be the program next winter? Will forces be reduced to the minimum in the fall? If so, what productive work will be secured from the "winter force" retained? Is it possible that the retention of a somewhat larger force throughout the winter will enable productive work to be secured from the force which would otherwise be retained as well as from the additional men, and if so, how does the cost of this work compare with that done during the summer? These are questions which will be answered either consciously or unconsciously during the next few weeks. The easy course is to follow past procedure and reduce forces. Of late, however, a number of roads have decided that this is not the most economical course. As a result these roads have done work heretofore considered impractical during the colder months in areas as far north as Chicago and Buffalo. Where accurate figures have been kept distinct, and to many surprising results have been noted. In the first place, the cost of the work done under these conditions has been little, if any, higher than during what are generally supposed to be the more favorable months. In most instances the winter cost has been practically the same as the summer cost. More important, however, is the fact that the amount of time spent by the track forces on routine maintenance during the winter has been reduced materially because of the fact that they had productive work to do. There has, therefore, been a distinct saving from this standpoint for while the forces have been available to fight storms when needed, they have been engaged at other times in laying rail and similar operations instead of "chasing snow-flakes." There are also other important indirect advantages, including the reduction in the number of men which it is necessary to recruit, house and train for temporary summer work and the assurance that work completed during the winter will not suffer from labor shortages during the following season. A committee of railway executives is studying the effect of seasonal fluctuations in forces. These fluctuations are greatest in the maintenance

of way department. The subject is worthy of more attention than it has received to date and maintenance officers can well afford to study it now in order to ascertain the extent to which it may be possible to schedule for completion during the next winter work which would otherwise be done during the fall or the following summer.

### *Self Education for Railroad Service*

**D**EBATING societies in country villages have been a material factor in building up American character. Ambitious youths with native ability, courage and health have by that means made up, more or less, for the lack of regular schooling. R. E. Woodruff's recent address before the New York Railroad Club reminds us that this primitive method of sharpening the wits has not lost its virtue. As compared with the intellectual atmosphere in which a lawyer, or a physician, or even a bookkeeper, learns his art, a great many young railroaders may be said to be in a primitive world, requiring quite definite education in elementary subjects; and for such young men practice in debate, on almost any useful topic, can hardly fail to prove profitable. A very definite benefit that members can derive from club discussions such as Mr. Woodruff recommends is the all-around culture (as distinguished from railroad education) which participation in the discussions is sure to produce. Possibly the reader may sniff at the word "culture" in this connection; or if he does not go that far, may call it a mere by-product; but it is a by-product well worth conserving. A letter from a correspondent, in this issue, commenting on Mr. Woodruff's address, places special emphasis on this. A veteran superintendent, writing in the *Railway Age* some years ago, and discussing the selection of men for the position of trainmaster, declared high moral principles to be more important than technical railroad knowledge. He looked first for unimpeachable character. Given that qualification there was good prospect of seeing the other qualifications cultivated by practice. A boy may be strengthening his moral habits before he has even thought of railroading. Surely this branch of his education should be one of the fundamentals, wherever he may pursue his studies or whoever may be his teacher.

### *How Serviceable Are the Stored Locomotives?*

**T**HE last figures issued by the Car Service Division of the American Railway Association indicated that a total of 6,680 locomotives were stored in serviceable condition. With a reserve of stored locomotives adequate to meet any probable emergency, the average motive power officer is naturally inclined to feel easy in mind. He may well question, however, whether some of these stored locomotives, even though recently out of the shop and with almost a full service mileage, are not of such obsolete design as to waste fuel and be totally unable to haul the tonnage trains required by modern operating conditions—in other words, be more of a liability than an asset. Speaking in a more or less general way regarding the present motive power situation, one of the keenest students of modern locomotive conditions said recently, "Of course we know the railroads have power enough, but some of this power is wasteful and should be replaced by units that will do somewhere between 25 and 50 per cent more work with the same fuel." The accuracy of this contention as relates to many locomotives, both stored and at present in service, is indicated by the large number



of locomotives scheduled for retirement on some roads. Sixteen per cent of the motive power units of one important railroad terminating in Chicago and owning in the neighborhood of 1,500 locomotives, are recommended for retirement because unsuited to modern needs, subject to frequent shopping, and excessively costly to maintain. On this same road and others equally important the application of feedwater heaters and other time-tested economy devices is precluded because superheaters have not yet been applied to all locomotives where economically justified. Plainly, neither the number of locomotives stored, nor their aggregate tractive effort affords an accurate measure of the ability of the railroads to meet economically an emergency demand for power. Modern industry frequently scraps machinery a few years old and still capable of many years service, simply because more productive machines have been developed which the industry cannot afford to do without. The expected record freight traffic this fall cannot be handled by the railroads with maximum economy in fuel consumption, maintenance cost and crew expense with some of the locomotives now held in white lead and reported as "Stored. Serviceable."

### *Satisfying the Country Shipper*

"THE local freight" is the title of a recent homily by the press-agent-philosopher of the Atlantic Coast Line; and, characterizing the conductor of this train as one of the important representatives of the railroad, the writer says that "it is an important part of his job to make shippers satisfied with what they get." The lumber shipper who does not get all the cars that he wants, on a certain day, or cars of the right kind; or the grain dealer who has to wait a day or two for a car of corn because a locomotive happens to break down somewhere, has cause for dissatisfaction; and usually it is the local conductor who must appease him. The conductor must be a diplomat. Says our philosopher:

Of necessity he is something of a good mixer as well. No matter how obliging he may be, it is not always possible to do all the things that folks ask him to do or to give them exactly the kind of service they may think they should have. Having done everything he can to meet their needs he must make them satisfied with what they get. Here is where past favors and personal friendships count big, and the conductor who is always obliging is pretty apt to hold the business of his shippers and thus to increase his value to the railroad.

We make note of this picture here as an encouragement to energetic conductors, who will be glad to see that they are appreciated; and as an incentive to young conductors who may become impatient because of the long months or years that are required to build up a good reputation which shall extend over the whole division. Being in such an important position the local conductor may well take to himself the concluding words of Marcus L. Bell, vice-president of the Rock Island, in his Chicago address, printed in the *Railway Age* of May 23, page 1291: "Railroad men have a calling which requires character of a very high order. . . . No dishonest man can stay in the railroad business." The task of making patrons satisfied when the road has failed to give perfect service—which must often happen—may tempt one to tell a white lie, now and then; but Mr. Bell has marked the only safe ground. The A. C. L. sermon also suggests a word of sympathy to the passenger conductor. He, also, must "make people satisfied with what they get" but without the aid of "past favors and personal friendships" with which the freight conductor fortifies his position. To wear a uniform and brass buttons does not mean that the passenger conductor has the easier job of the two.

## Operating Efficiency Makes New Records

THE operating statistics of the Class I railways for May, which have recently been issued by the Interstate Commerce Commission, furnish additional striking illustrations of the increases that are being made in operating efficiency. Average gross tons per train—excluding locomotive and tender—in that month were 1,695. This exceeds any figure previously reached, the best previous record of 1,693 tons having been made in October, 1924. This new high record was almost entirely due to the fact that the average number of cars per train was 44.6, which also exceeded the best previous record of 43.8, which was made in October, 1924. Although the average weight of trains was greater than ever before they were moved an average of 12.2 miles an hour, which exceeded the previous high record of 12 miles made in April.

To get a good perspective on the progress that is being made in efficiency these figures may be compared with those for May, 1920. In that month the amount of freight business handled was about the same as in May of this year, and gross tons per train averaged 1,470, cars per train 37.1 and average speed 10.8 miles. Therefore the average weight of trains has increased 15.3 per cent, average cars per train 20 per cent and average speed of trains 13 per cent. The gross weight of a train multiplied by its speed shows the average number of tons hauled one mile each hour by the locomotive. This figure for May, 1920, was 15,876 and for May, 1925, it was 20,679, an increase of 24 per cent. This is a measure of both locomotive efficiency and operating efficiency, and the figures show that there have been great increases both in the efficiency of locomotives and in the way trains are handled between terminals.

One thing which has increased the difficulty of securing good operating showings has been the tendency of the average load per car to decline. This has been partly due to changes in the ratio of heavy loading to light loading traffic, and partly to the tendency of shippers to ship in smaller quantities. The figures heretofore given regarding the weight of trains include, of course, the weight of cars as well as the weight of the freight in them. The average number of tons of freight carried in each loaded car in May, 1920, was 28.2, while in May, 1925, it was only 26.9. In spite of this decrease in the average load per car, however, the increase in the average number of cars handled in each train has been so great that, whereas the average number of tons of freight in each train in May 1920, was 725, it had increased in May, 1925, to 755. This increase in the average tons of freight per train, together with the increase in the average speed of trains, resulted in an increase in the number of tons of freight hauled one mile by each train hourly from 7,830 in May, 1920, to 9,211 in May, 1925, or 17½ per cent.

There have been great changes in the volume of traffic moving on different railways in different parts of the country since 1920. The traffic of some roads has largely increased while that of other roads has largely decreased. These changes have been partly due to the influence of the Panama Canal, partly to the fact that some sections have been more prosperous than others, and partly to changes in conditions in the coal industry as a result of which there has been a large increase in shipments from the non-union mines and, on the other hand, a large decrease from the union mines.

In consequence some railway managements have had to deal with much more adverse conditions than others. It is notable that in spite of these things 46 of the 50 largest

roads in the country have increased average gross tons per train, that 29 have increased average tons of freight per train, and that practically all have increased the speed of trains.

A bad feature of the situation is that the average dead weight per train increased from 745 tons in May, 1920, to 940 tons in May, 1925, or over 26 per cent, while the average trainload of freight increased only 4 per cent. This was partly due to an increase in the average weight of cars, but principally to the relatively large decline in the average number of tons loaded per car. The increases in the dead weight which the railways are hauling per car and per train have been relatively so great as forcibly to suggest the need both of more co-operation on the part of shippers in loading cars heavier and of study by the railway managements of the question of reducing the dead weight of cars. On the whole, however, the statistics reflect a steady and remarkable increase in railroad efficiency.

## Importance of the Western Rate Case

THE case for an advance in freight rates which the western railways now have before the Interstate Commerce Commission is the most important case that has been presented to the Commission in 15 years. This is not because of the amount of revenue involved, but because of the principles involved. The cases for an advance in rates in 1920 and for a reduction in rates in 1922 involved a great deal more revenue. Those cases, however, turned largely upon abnormal conditions as regards general business and prices. The outcome of the present case will necessarily be accepted as indicating how the commission may be expected to administer the rate making provisions of the Transportation Act under normal business conditions.

Fifteen years ago (in 1910) the railways, faced by advancing wages of labor and prices of materials when business was normal and general prosperity prevailed, petitioned the commission for a general advance in rates. They showed that reasonable and adequate net earnings were threatened by the upward trend of operating costs and the generally downward tendency of rates. The commission declined to grant any advances upon the ground that they were not then needed. It even expressed the hope and belief that the net return of the railways would increase.

That decision was the turning point in rate regulation before the war. It condemned to failure the policy followed by the Commission under the Interstate Commerce Act with its then provisions. The percentage earned by the railways on their property investment in 1910 was 5.53; in 1911, 4.77; in 1912, 4.55; in 1913, 4.86; in 1914, 3.93 and in 1915, 3.98. There was a sudden increase in 1916 to 5.97, but a decline in 1917 to 5.12. This decline in the net return earned caused a great decline in the annual investment made in the railways and in the development of their physical properties. They became unable to handle the country's business satisfactorily. Early in December, 1917, the commission, in a special communication to Congress, said it could not advance rates enough to offset the rapidly increasing operating expenses. That was the breakdown of regulation. Within a month government operation was adopted and there followed large increases in both operating expenses and rates.

The discussion of the Transportation Act which pre-

ceded its passage by Congress shows clearly why it was adopted. It was conceded by most persons that the federal laws regulating the railways should be so changed as to authorize and direct the commission to follow a different policy from that which had been followed before the war. What that policy should be was set forth in the rate making provisions of the new law. The commission was directed, in making just and reasonable rates, to so adjust them as to enable the carriers as a whole, or such groups as they might be divided into, to earn a fair return, and in determining what was a fair return to take into consideration the need of the nation for the adequate development of its means of transportation.

The large advance in rates in 1920 was made in an effort to give effect to these provisions. The railways failed in 1921 to earn a fair return, but a general reduction of rates was made in 1922, first, because prices had greatly declined and business conditions were abnormal, and, secondly, because the commission apparently believed that within a short time reductions of operating expenses and increases of traffic would enable the roads of each group to earn a fair return on a lower basis of rates.

An extensive readjustment of prices has since occurred as a result of which their relations are much nearer what they were before the war than they were in 1921 or the early part of 1922. Freight business has increased, but the railways have never been able to earn the fair return expected. This is especially true of the western group of roads which have constantly failed and are still failing to earn anywhere near a fair return. Meantime the country has been provided with good and adequate transportation because the managements of the railways have invested large amount of new capital with the confident expectation that when business conditions became normal a policy of regulation in conformity with the plain provisions and purpose of the law would be adopted by those in authority.

By petitioning for an advance in rates sufficient to enable them to earn a fair return the western lines have now raised in the most direct possible way the question of how, under normal conditions, rates are to be regulated under the Transportation Act. The decision reached by the Commission in their case can hardly fail to have as great and far reaching effects upon the railroad industry as those produced by its decision in the first important rate advance case fifteen years ago.

There is a disposition in some quarters to deprecate so-called "percentage" changes of entire schedules of rates. All the really important changes for years have been horizontal advances or reductions. This has repeatedly caused maladjustments between commodities and communities. The objections to horizontal changes are many. No doubt it would have been better in the past, and would be in future, if practicable, to make changes only in the rates on specific commodities and between specific points. This has not been done, however, because it has been regarded as impracticable. The important changes, whether advances or reductions, have been made to meet emergency conditions. In emergencies the element of time is a most important consideration; and for many of the railways in western territory the present situation constitutes an emergency just as truly as did the conditions which required horizontal changes in the past.

The western rate case is not important, however, merely because of the emergency conditions which exist. It is important because of the questions of principle involved and of the precedent that will be established. If the com-



mission decides to adopt some plan which will restore the reasonable earning capacity of the western lines the effect will be to cause a continuance of investment in railway properties on a large scale which will enable them to continue satisfactorily to handle the country's business. If the commission should fail to do this it would largely destroy confidence in the provisions and administration of the Transportation Act, arrest investment in railways and do incalculable harm.

## Naming the New Locomotive Types

LOCOMOTIVE types are distinguished by the differences in a single characteristic—the wheel arrangement. There are many other characteristics in which locomotives differ that affect the efficiency of their performance in a much more pronounced manner than the wheel arrangement, but since in a general way their relative tractive force or cylinder capacity depends on the number of drivers and the relative boiler capacity for a given number of drivers depends on the number of truck wheels, the wheel arrangement forms the natural designation by which they are classified with respect to the character of service for which they are suitable. Three new wheel arrangements have been developed since the first of the year. These are the 2-8-4 type built by the Lima Locomotive Works, Inc., and the 4-10-2 type locomotives, several of which have been built for the Southern Pacific and one for the Union Pacific by the American Locomotive Company, and the 2-10-4 recently ordered by the Texas & Pacific from Lima. These types, like all those which have preceded them, are most conveniently distinguished by the Whyte system of designation using numerals to indicate the number of axles in three groups: first, in the engine truck; second, in the drivers, and, third, in the trailing truck. Each type, however, has also been distinguished by a name. There has apparently been little system in the selection of these names, but however selected, their appropriateness is evident from the fact that they have become as well known and as commonly used as the more descriptive numerical designations. The selection of type names is a matter which would warrant little consideration were it not brought up by the purchase by two railroads of locomotives of a new type, at practically the same time which in naming, each road has identified with its own name. Under such conditions it is doubtful whether either name will ever become permanently established. In fact, in the case of but one type has a name identified with an individual road ever become permanently established. The 2-10-2 type, well known as the Santa Fe type, was first placed in service on the Atchison, Topeka & Santa Fe in 1904 and was so long used exclusively by that road before being taken up on any other that the name became thoroughly established before there was any incentive to question it. The selection of names identifying locomotive types with the localities or character of the territory in which they were first put to use, however, seems to have stood the test of time, and, in the case of the new 2-10-4 type now on order for the Texas & Pacific, the name "Texas type" suggested by the railroad will probably become permanent. Why not follow the same course with respect to the other two new types? For instance, the new 4-10-2 type of locomotives might well be designated the Sierra type and the new 2-8-4 type, first placed in service on the Boston & Albany, might be called the Berkshire type.

## Is It Safe to Spend Money on Suburban Traffic?

THE commuters of the New York, New Haven & Hartford, who are doing all in their power to combat the increase in intra-state commutation rates in the New York zone which went into effect on August 1, have not at this writing been able to secure a court order enjoining the increase nor even impounding the collections. The road has merely agreed to receipt for them pending an appeal for a rehearing. The present stage of the combat is not important. Either it will end abruptly in the favor of the railroad or else a fight in the courts will ensue; there is apparently little immediate danger that the increase granted to the road will be permanently and unchangeably removed at any early date. But the ultimate outcome of the case is of the greatest importance to all railroads operating suburban service, since it may set a precedent for the attitude of the authorities to the service and the principles which will guide them in dealing with it.

Suburban business was at first on most roads—and still is on many—practically an ancillary service, the bulk of which to total railway traffic was so slight that it could be carried at out-of-pocket costs. In an earlier day when terminal and other facilities were not overtaxed, commutation probably enjoyed a position similar to that of excursion traffic, which can be handled at extremely low rates without prejudice to railroad net earnings. Now, however, in most places conditions have changed. Suburban traffic has grown to the point where it tends to crowd out traffic which pays a much higher rate.

This certainly is the case with the New Haven in the New York zone. The whole zone is electrified; grade crossings are virtually non-existent; there are many costly station structures; and passengers are carried into Grand Central Terminal in the very heart of New York. And yet, for this superior service, the New Haven has been charging rates considerably below those of other railroads in the area which provide only steam service, which do not enter New York City at all, which certainly have an investment per mile far under that of the New Haven and which have no costly rent for terminal facilities to pay. Does such extraordinary service deserve compensation or not, especially when it is growing to the point where it is crowding service which is clearly remunerative?

Again, a large part of the territory served by the New Haven is also served by its subsidiary, the New York Westchester & Boston. This line is also electrified, but the main objection which commuters have to it is that it does not enter the heart of the city. If they use the Westchester instead of the New Haven—which the New Haven would gladly have them do—they must also use one of the city transit lines to get to the business district of the metropolis. In some respects, accordingly, the Westchester line is analogous to the steam lines which do not enter the city. Rates on these steam lines are certainly not so high as to make the commutation business particularly remunerative to them. Yet, prior to this increase, the New Haven's rates into Grand Central Terminal were lower. If the New Haven commuters want rates lower than those now charged into Grand Central Station, they can secure them by riding the Westchester—which will involve some inconveniences to be sure, but no more than those endured every day at higher rates by commuters on lines which terminate in New Jersey. The New Haven commuters want two loaves for the price of one.

Suburban traffic on the railroads is growing out of all

proportion to other passenger traffic. A railroad can afford to carry a little unremunerative traffic and still exist, but when the unremunerative traffic shows a tendency to increase to the point where it interferes with paying traffic—and indeed threatens to overwhelm it—then steps must be taken to make it at least pay its own way. The New Haven by its submission to the state commission and to the Interstate Commerce Commission was able to convince the commissioners, who are men expert in such matters, that previous rates were not paying its operating expenses, to say nothing of a fair return on the investment. The only way which these commissions have of assuring adequate revenues to the railways is by permitting adjustments in rates. If the commuters do not want to pay for the service in this manner, it is up to them to put up the money in some other way. In New York City low fares on the rapid transit lines are secured by the provision of facilities by taxation. Perhaps this procedure is justified. Adequate transit increases real estate values and the city can reimburse itself by larger collections of taxes resulting therefrom. However, in the case of the New Haven, the passengers are expecting the railroad to provide service at unremunerative rates when the railroad itself has made all the investment necessary for the service and is itself paying the terminal rent of Grand Central Terminal. When the people through their local governments offer to reimburse the railroad for its capital expenditures for the service and when they offer to pay its rent for the use of Grand Central Terminal—then and only then can they demand rates so low that they will not cover these charges. Service must be paid for by someone. The only method open to the railroads at the present time is by increasing rates. What have the combatant commuters to offer instead?

Not long ago a proposal was made by certain interests in Westchester county, New York, a part of which is in the New Haven's suburban area, that they be permitted to build at the expense of their county a subway through the heart of New York City. This is a clear recognition of the fact that extremely low rates for suburban travel are not remunerative and that to have low rates the public has to pay for the facilities in some other way. Certainly the railroads are not going to be foolish enough to make the costly improvements which this growing traffic will entail if fair returns on investments already made are denied. A burnt cat avoids the fire. Meantime the commuting public, if they should so succeed in discouraging the railroads from any further interest in their suburban traffic, would be thrown back entirely on the slow-moving local authorities—which latter may be able to do something eventually toward transit relief, but which surely will never do anything without cost to the people.

## Articles in the August Railway Mechanical Engineer

*The Evaporative Capacity of Locomotive Boilers*, by Alexander P. Poperev. A new formula is proposed for determining the relationship between the rate of evaporation and the rate of combustion. Page 487.

*"Bill Brown" Started Something*. A number of interesting letters have been received since the publication of the first prize article in the competition on foreman training. Three letters, one of which severely criticises "Bill Brown," are published in this issue. Page 492.

*How to Stop Hot Box Epidemics*, by A. M. Orr,

Bessemer & Lake Erie, Greenville, Pa. A paper submitted in a competition on hot box prevention in which it is shown how a system of regular reports will show where trouble originates and the results that can be accomplished by personal investigation as to what caused the trouble. Page 409.

*Passenger Car Scheduling System*, by Joseph Gullage, General Foreman, Car Department, Boston & Maine, Billerica, Mass. A description of the system of scheduling and routing work in the Billerica shops of the Boston & Maine which has increased the shop output and reduced the working force to a minimum. Page 502.

*Distribution of Overhead Charges in Locomotive Shops*, by W. A. Jones, London, England. A discussion of the distribution of overhead charges in which the cost per hour to operate a machine is suggested as an accurate basis on which to distribute total overhead costs. Page 513.

## Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books and Pamphlets

*Index to Proceedings of International Association of Industrial Accident Boards and Commissions 1914-1924*, by Glenn L. Tibbott. Bulletin 395 of U. S. Bur. of Labor Statistics. "Railroad workers," p. 22-23. Pub. by Govt. Print. Off., Washington, D. C., 10 cents.

*Posters by Royal Academicians and Other Eminent Artists*. Reproductions measuring 7 in. by 5½ in. in color of posters done for London, Midland & Scottish Ry. Foreword by Sir Martin Conway. 10 p. 18 color prints. Pub. for L.M.S. by Eyre & Spottiswoode, Ltd., London, and obtainable at L.M.S. office, 200 Fifth avenue, New York. \$1.

*Public Relations Number, Aera, August, 1925*, Articles on many aspects of public relations including posters here and abroad, employee co-operation, etc. 155 p. Pub. by American Electric Ry. Asso., New York City. 35 cents.

*Up from the Soil*. History of wheat industry. Wheat transportation and freight rates, Chapt. 7. Vol. 3 of Manhattan Library. 84 p. Pub. by Bank of the Manhattan Co., New York City. Apply.

### Periodical Articles

*Control of Ocean Freight Rates*, by E. S. Gregg. Fluctuations and reasons for them. Commerce Reports, August 3, 1925, p. 249-250.

*German Reconstruction of Railroads*, by Dr. Wilhelm Kretschmann. Organization, equipment and accomplishments of German railway field corps during world war. Military Engineer, July-August 1925, p. 314-319.

*The Place of Railroad Apprenticeship in a National Apprenticeship Plan*, by F. W. Thomas. The plan on the Santa Fe system. Mechanical Engineering, August, 1925, p. 624-625.

*The Price of a Porterhouse*, by F. S. Tisdale. Various items, including freight rates (p. 15-16) that influence the price. Nation's Business, August, 1925, p. 13-16.

*Railroad Consolidation—the Paper Plan That Failed*, by A. H. Ulm. Article I discusses Ripley plan. Barron's, August 3, 1925, p. 3, 8.

*Social Control of Railway Earnings in "The Potter Plan"*, by J. Shirley Eaton. Annalist, July 31, 1925, p. 115-116.



## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

### The Real Value of a College Education

CHICAGO.

#### TO THE EDITOR:

Referring to the letter appearing in the *Railway Age* of May 2, page 1076, from James H. LeVan in regard to college men on railroads. It seems to me Mr. LeVan's letter answers his own question. As a junior at college he is already imbued with the idea that he has "more knowledge and broader training than the average man who has never had college training." This very thing seems to me to be half the trouble with college men in railroad service, and elsewhere. They are entirely too "stuck on themselves" when they start and have to spend about as much time getting this idea knocked out of their heads as the man without the college education takes to self educate himself up to their level.

Nobody believes in college education more firmly than I do, but a college education is beneficial only to the man who can absorb it. About 65 per cent of the human race cannot profit by a college education or any other advantage that may be thrown in their way. They are bound to be failures or mediocrities. As far as success in the world is concerned, the mere fact that a boy's father has had money enough to send him to college does not necessarily prove that he will profit by the fact that he has been there, and be any more valuable in the world than the man who has not.

JAMES B. LATIMER,  
Signal Engineer, Chicago, Burlington & Quincy.

### Railway Passenger Traffic—Excursions—Salesmanship

BALTIMORE, Md.

#### TO THE EDITOR:

I know a railroad man who is very low in his mind, as you may see for yourself from the following excerpt taken from a letter recently received by this office:

"... yet I am compelled to advise on account of automobiles and bus competition, the local trains on all railroads have shown a decided falling off. That it is a question whether the railroads are even justified in continuing operations (i.e., commutation trains), and certainly they are not justified in spending any money for business that is carried at such a low rate per mile as commutation business."

This man's railroad runs through part of the most beautiful country in America. The aforesaid smiling countryside is closely adjacent to one of the largest cities in America. In this huge city, there are literally thousands of people who, within a few months, will be gasping for breath under the heat of sweltering midsummer sun.

It seems the easiest thing in the world to me to get this traffic-hungry railroad and these country-hungry people together, but no one else seems to agree with me.

JOHN E. WILEY.

LOS ANGELES, Calif.

#### TO THE EDITOR:

Are not the railways overlooking a bet in the way of soliciting passengers? Selling tickets is not fundamentally different from selling any other commodity used by the public.

Some of the greatest mercantile establishments are founded on mail-order trade, why should not the railroads gain by mail solicitation?

The way it is now, we advertise, and the prospective passenger drops us a post-card. In return, he gets many pamphlets, and, perhaps is called on by a representative of the road.

Why would not this be better: Write the prospective passenger a nice friendly letter. Tell him of the trip. At points of interest, mention the agent by name, etc. In other words, write him as though he were an old personal friend, about to take a trip you had just completed, and were enthusiastically trying to get him to make. Send the pamphlets, too, but make it plain that his trip is receiving the personal attention of someone well acquainted with his needs.

I do not mean that traveling representatives should be done away with. Your prospect is interested, otherwise he would not write the post-card. Sustain and amplify that interest by means of your letter, and either tell him that a representative will call, or enclose a stamped post-card for him to return if he desires such a call.

W. E. BELL.

### Man Failures

NEW YORK, N. Y.

#### TO THE EDITOR:

In spite of the splendid organizations of the present-day railroad, many dangerous conditions and practices can be found daily, as evidenced by the following observations made on two large railroad systems.

Sometime ago train No. 12 arrived at S— Junction at 12:14 A.M. The mail clerks in the first two cars behind the engine began at once to throw sacks of mail out onto the ground. At 12:15 A.M. the engineer called in the flagman, who was evidently standing very close to the rear end of the last car, as the engineer started the train immediately. The mail clerks continued to throw sacks of mail and parcel post packages along the track for a distance of about 200 feet. What is more important is the fact that this engineer left the station three minutes ahead of the scheduled leaving time, which was 12:18 A.M., thereby violating one of the most important rules. This incident happened on double track, but the crew of a long freight train which had left just ahead of No. 12 might have been figuring on that three minutes to get into clear. This is rather close figuring, of course, but it would be just the time when the flagman of the freight train would fail to go back the required distance to insure full flag protection, and such a combination of errors is one that can hardly be called safe.

On another road, No. 44, a main line passenger train, arrived at A— one afternoon shortly after the arrival of No. 30, a branch line train, which was standing on a stub track parallel to the main track. The steam heat line valve at the rear end of No. 44 was wide open, and passengers alighting from No. 30 caught the full force of the

steam issuing from this line as it swept across the platform. A cloud of dust and grit with blown into the faces of some small children who were among the passengers, causing them considerable pain. This same performance was observed on three other occasions at this station, and it might have been the cause of serious eye injuries among the passengers. Aside from the danger of such a practice, considerable fuel can be wasted by opening the train line valve wider than is necessary to get rid of condensation in the line.

We left A—one night about ten minutes late during a heavy rain storm and at the end of a hard pull up a five-mile grade we were stopped by a red light on the signal mast governing movement onto the single track. The operator's shanty was about 2,000 feet up the track, and, as the engineer did not receive any response to his three calls for the signal, the conductor was compelled to walk through the storm to the office to find out why the train was being held. His lantern had just disappeared within the office when the signal was changed to green. We pulled up to the office and were told by the conductor that he had found the operator, who was a mere boy, sound asleep when he went into the office. Altogether we had lost about twenty minutes, a delay not easily made up under the prevailing weather conditions.

As we proceeded onto the single track, I remarked to the engineer that the possibility of an accident resulting from such inattention to duty was rather serious. He replied that the poor boy was not paid enough for his work. This certainly cannot be considered an excuse for operators or others on whose alertness and close attention to their duties depend the lives and safety of passengers to neglect their work in this manner. As it happened, nothing serious resulted from this man-failure, but there is no doubt but that many accidents have been caused by just such failures on the part of employees in important positions to attend strictly to their work.

HOWARD G. HILL.

## Debate as an Education for Railroad Officers

BOSTON, MASS.

TO THE EDITOR:

I have read with much interest your report of a few weeks ago (May 30, page 1337) of an address delivered recently at the New York Railroad Club by R. E. Woodruff, superintendent of the Erie Railroad at Buffalo. Mr. Woodruff's delineation of the deficiencies in our education as railroad officers is overwhelming. And we have to admit that this record of what we are neglecting is all true. To make 100 subordinate officers of average ability into 100 of first quality is indeed an imposing task. The problem being so difficult and intricate; and having been so well known for years (this is not the first time that we have had such a picture of our shortcomings) the question at once presents itself, why has nothing effective ever been done about it?

If the remedy is at all within reach it would seem that some bright railroad man would by this time have induced the American Railway Association to get up a committee report on the subject, telling everybody what to do. Mr. Woodruff's debating club would seem to be an excellent idea; and evidently we may expect to hear further encouraging words about it; but I am sufficiently moss-back in my instincts to suspect that there will be many superintendents (and other officers) who ought to follow his example and yet who will sit still and do nothing,

while there will be few who will efficiently bestir themselves.

Truly, as Mr. Woodruff says, the officer's reward is commensurate with his activities. An officer who supervises hundreds or thousands of men needs to be big enough as a man—not merely as an executive officer—to enjoy rewards; to seek a moral satisfaction in his work. It is a beautiful ideal to be unselfish in the extreme; to devote every thought to the welfare of the company and its employees; but it is entirely human and proper to give attention to one's own inner consciousness, at least to the extent of getting joy out of—or rather in—one's everyday activities. And in the particulars here under review, the activities must be vigorous, extensive and well kept up. Any large railroad ought to have several debating clubs.

My more particular reason for writing to you, however, is to remind any superintendent who is at all doubtful about getting up courage to make a move in this matter, that every step in an enterprise of this kind is a simple one. The very simplicity of the scheme is perhaps the reason that everybody waits for others to move. Look at Mr. Woodruff's principal points, the principal qualifications and qualities to be aimed at, as set forth near the close of the article; *confidence, courtesy, co-operation and fair play*. Nothing whatever of mystery. These four elements can be learned in any business. If you need advice or help and cannot find a railroad man who can give it, go to a schoolmaster; or a lawyer, or a retired "captain of industry." If members of a debating society start out to cultivate their minds in these arts they can accomplish a considerable degree of success even if they do not discuss railroading all of the time. Diligent study of how to run a city government, or a church, a small factory, or a business college, will help materially in qualifying to manage railroad men. The fifth qualification named by Mr. Woodruff, "human understanding" is a product of the exercise of the other four; and, as before observed, almost any social calisthenics for the intellect can be made to show profitable results.

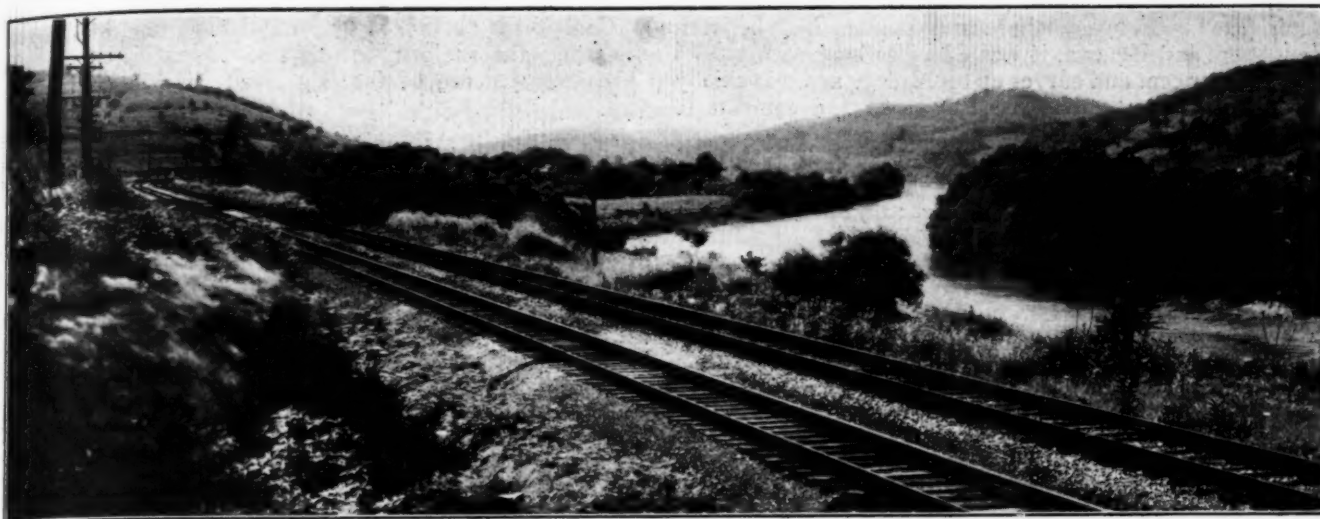
Indeed, this fact, that qualifications for succeeding as a leader of railroad employees can be cultivated in other fields, explains in part why the establishment of special railroad schools has been almost universally neglected. Many a young man will tell you that his ability in his railroad position is largely the result of what he learned in high school. On the four business virtues just named, the young man can make very material educational progress almost anywhere; as a clerk in a grocery, for example.

Let every superintendent, therefore, who aspires to follow Mr. Woodruff's ideal, start in *anywhere*. If a railroad debating society is not feasible just at present, hitch on to any kind of a gathering, where serious discussions can be had; begin at any time, or any place where can be found (or be gathered) a sufficient number of earnest young men to keep up the necessary momentum. (A small movement might fail for so simple a reason as the lack of a fly-wheel.)

And, finally, if lack of numbers should prove too great a handicap let the superintendent bestir himself to see what can be made out of individual students in the high school. Within fifty miles of the office of Superintendent Smith (or Jones or Brown) there are numbers of high school students (and possibly night-school students) who very likely are destined to become station agents, train despatchers, yardmasters or traveling passenger agents. Somebody ought to inspire these young men with definite ambitions by which they would come out of school partly fitted for railroad work.

N. H. G.





Some of the Finished Track Along the Big Sandy River

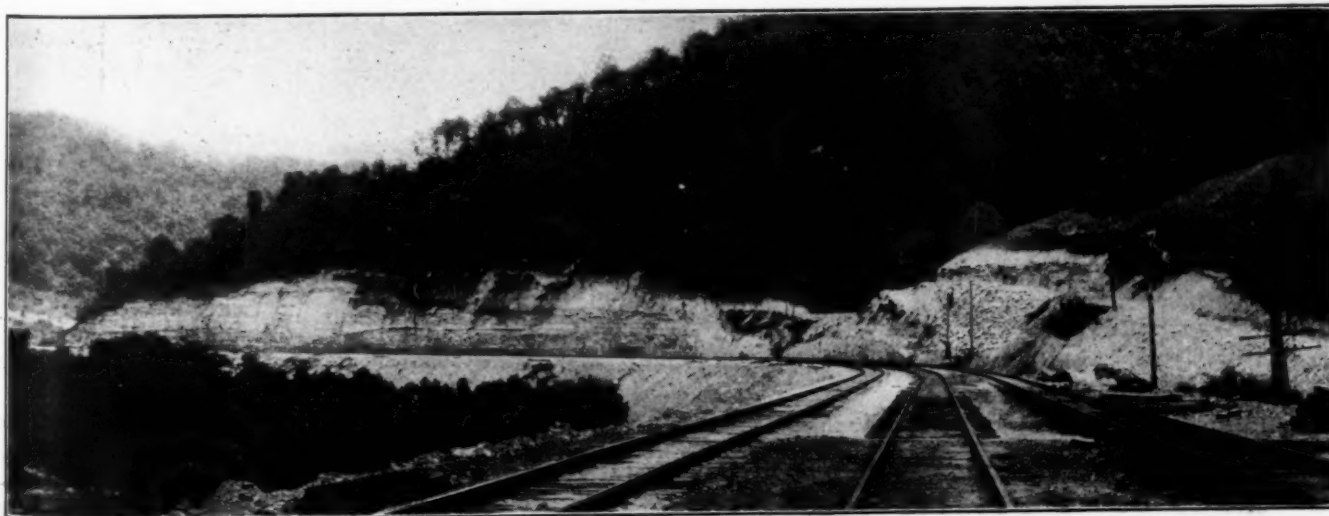
## Norfolk & Western Double Tracks Its Big Sandy Line

*Considerable difficult and expensive work was necessary  
in order to provide additional facilities*

IN order to relieve an intermittently occurring congestion and at the same time to provide more adequately for the demands of an increasing volume of traffic, the Norfolk & Western has recently double-tracked its Big Sandy line, a low grade line between Naugatuck, W. Va., and Kenova. The work included about 59 miles of the new second track involving some heavy grading, the larger proportion of which was rock, the construction of two new single-track tunnels and the gauntletting of three others. A considerable amount of new highway construction was also necessary as well as a complete revision of the signal system. An interesting

method was utilized in the reconstruction of the bridges for double track operation.

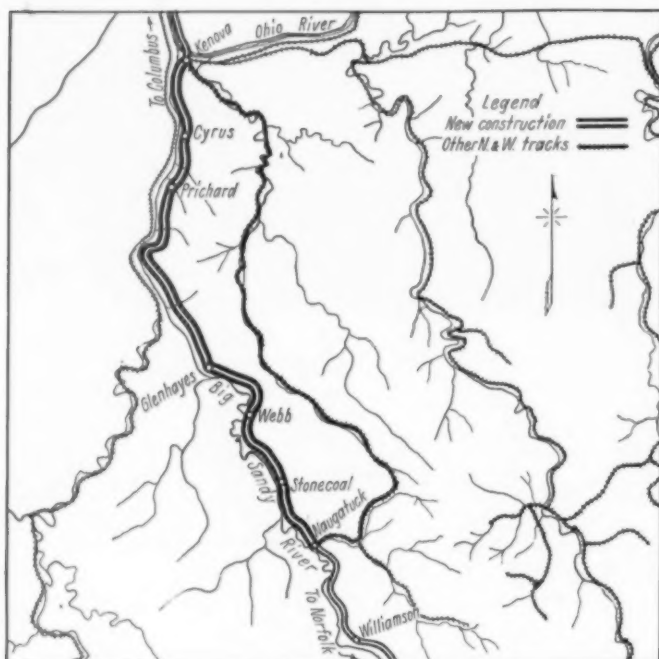
The Big Sandy line was originally constructed in 1902 as a single track road with a total length of 59.12 miles, closely paralleling the bank of the Big Sandy river from which it took its name. It was built primarily to furnish a low grade line between Naugatuck and Kenova for the heavy westbound drag and time freight movement, the expectation being to use the old line for the lighter east-bound movement, a proportion of which was return empties. The old line was built through the mountains in anticipation of a heavy coal development which never



The Work Involved a Number of Highway Changes and a Considerable Amount of Side Hill Excavation in Rock

materialized. Between the same points, i.e., between Naugatuck and Kenova, it was 83 miles long with grades up to one per cent and curves up to 12 deg. and was chiefly descending to the east. The Big Sandy, in contrast to the above, was built with maximum grades of 0.05 per cent and with the exception of two 8 deg. curves which are

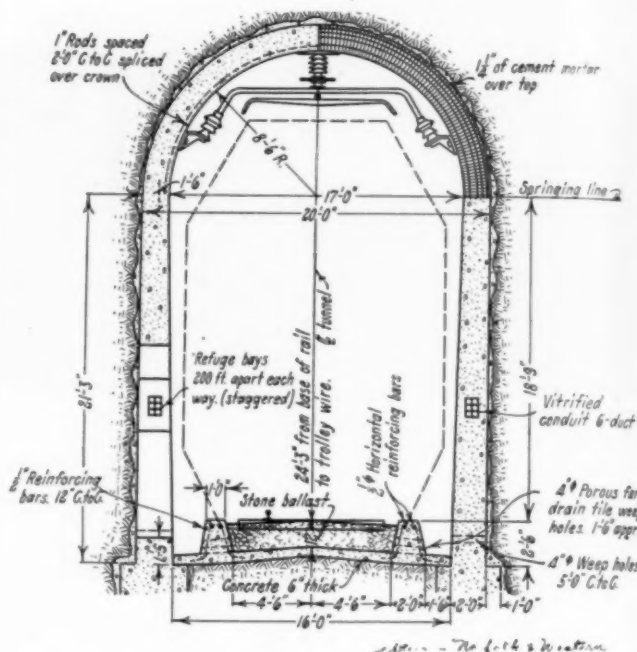
Coal forms about 75 per cent of the traffic in this section and the majority of this movement is westbound. The intensive use of the Big Sandy line in conjunction



The Big Sandy and the Old Lines Between Naugatuck and Kenova

a part of the new second track, has a maximum curvature of 6 deg.

Owing to the many advantages of the Big Sandy, it gradually became used for traffic other than that for which



Norfolk & Western Standard Single Track Tunnel Section

with the increased traffic in recent years resulted in occasional periods of congestion that were a handicap to the operation of the road as a whole. In order to obviate this condition and at the same time to provide for a more economical eastbound movement, it was decided to double track the Big Sandy line and to utilize the old line only for local freight and passenger trains. With the diversion of the eastbound traffic to the low grade, there will result



Making the Fill for the Approach to the 6-deg. Curve Around Tunnel No. 6

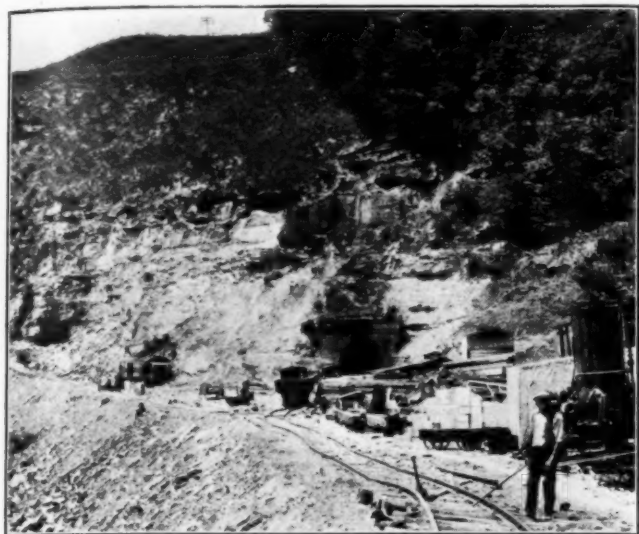
it was originally intended and its traffic included east and westbound through passenger trains and time freights and westbound tonnage freight, local passenger trains and eastbound slow freights being sent over the old line. During a normally good month, a total of about 50 trains a day operate over both lines.

a saving of about two hours in running time between Naugatuck and Kenova, as well as an elimination of pusher service on the old line.

In the original construction of the Big Sandy line considerable trouble was experienced from slides and slips, both above and below grade, owing to the nature of the



soil. The same difficulty was experienced during the building of the second track. While a considerable part of the excavation was of sandstone there is much of this country where the sandstone was in large isolated blocks free to move when the surrounding soil was disturbed.



**New Single Track Tunnels Were Constructed in Preference to Double Tracking the Existing Ones**

There were also many sections where the dirt overlaid a sloping rock which, when wet by rains, formed a line of cleavage that resulted in slips that either overflowed over on to the track or as sometimes happened, carried the track out into the river. Thus where the original line of the Big Sandy lay along the bank of the river, the new second track was located in the side hill, the excavation also giving additional material for wasting over the embankment for further protection against slips, highwater and washouts. Where the line was well away from the

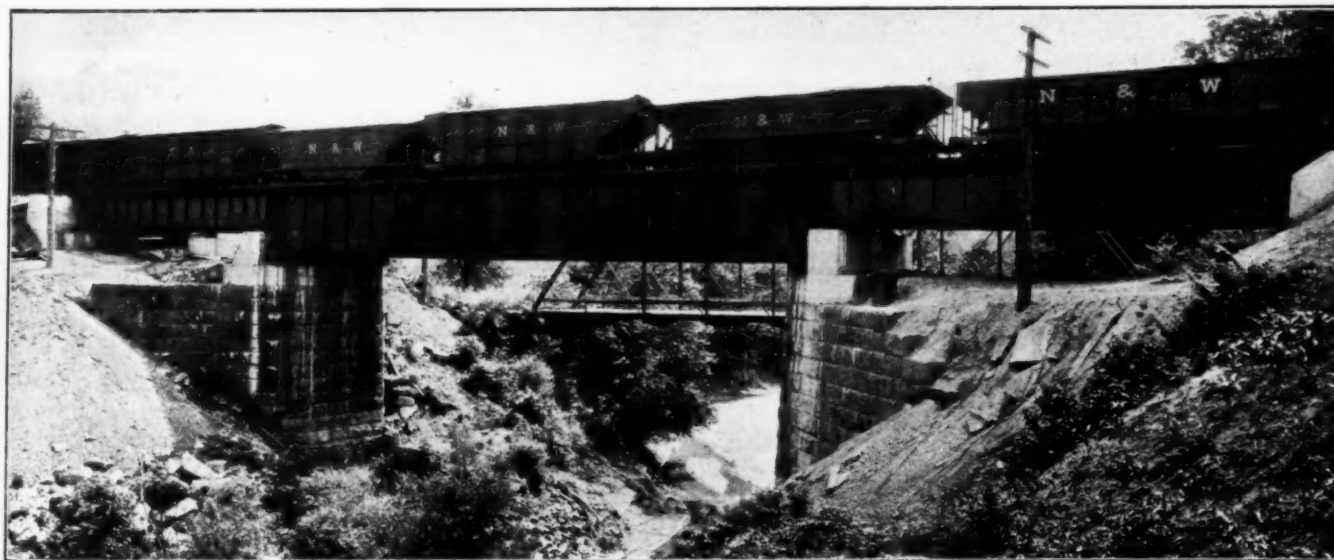
among other things the construction of a large coaling station and water service facilities at Pritchard (described on page 995 of the April 18, 1925, issue of the *Railway Age*) and a new assembly and distributing yard and water softening plant at Stone Coal.

Since the line followed the north bank of the Big Sandy river through a rugged country, the greater part of the yardage was side hill excavation. This work was



**Considerable Trouble Was Experienced from Slides. Piling Was Driven Wherever the Soil Was Unstable**

carried forward in sections and involved the moving of approximately 1,300,000 cu. yd. With the exception of the section extending from Pritchard to Webb, about 28 miles, all of the work was handled clear of the main track, utilizing either the new second track or a construction



**The Existing Single Track Structures Were Rebuilt in an Interesting Manner**

river the new second track was located on the river side, the track being cut, swung over and connected up as completed. At Naugatuck where the old mountain line and the Big Sandy diverge, another track was installed to form a second leg of a "Y" and to give a greater flexibility of train operation. Additional improvements included

track or a combination of the two. From Pritchard to Webb, the material was handled by routing over the main line. Along those cuts where the earth was unstable, precautions against sliding were taken by driving piling along the toe of the cut and backing this piling with short pieces to form a curbing. An example of the action of

the soil in this section is that of a low fill near Cyrus which spread out to a width of 150 ft. before any degree of stability could be secured.

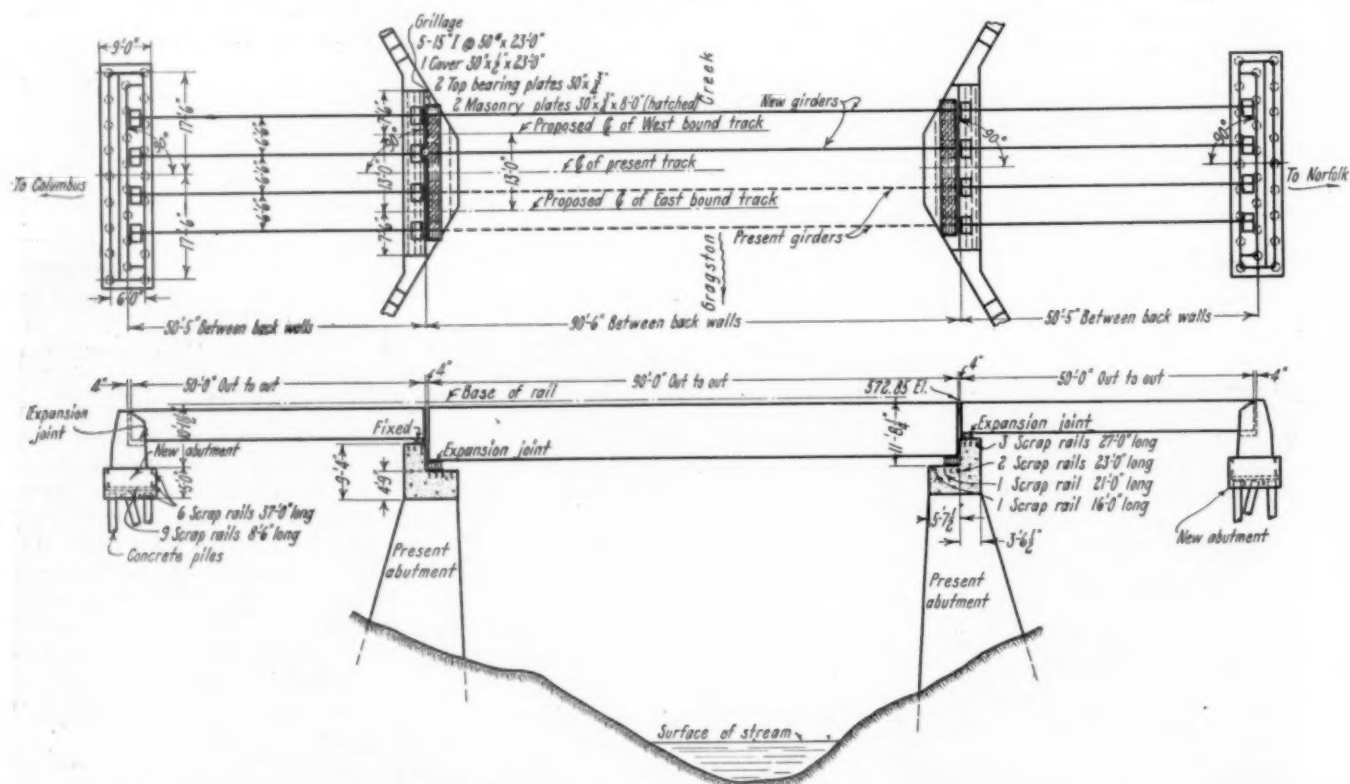
There are seven tunnels on the Big Sandy, all located in the first 14 miles west of Naugatuck and varying from 250 ft. to 2,600 ft. long. Double tracking these tunnels under traffic would have involved a heavy additional expenditure that was not felt to be justified at the present time. For that reason, it was decided to gauntlet three of the tunnels, run around two and drive two new single track tunnels parallel and near to two of the old ones thus serving, in the latter case, the same purpose as double tracking them. Tunnels 1, 3 and 4, numbering west out of Naugatuck were gauntletted. Tunnel No. 2 is a short tunnel under a narrow ridge running out on to a well rounded point, around which the eastbound main could be laid by the use of curvature slightly in excess of the maximum for the remainder of the line. This plan was felt to be entirely practicable since the heavy tonnage movement was westbound and with the lighter movement eastbound, a slight increase in the curvature would have no noticeable effect upon operation. Second track was also built around Tunnel where the conditions were similar to those at No. 2 with the exception that a 6 deg. curve could be used. The new tunnels will be constructed according to the standard section of the Norfolk & Western in which provision has been made for the possible installation of an overhead catenary system. They are lined with concrete, utilizing a concrete base and ballast retaining wall. Where the tunnel is overlaid with coal or where there is much seepage of water, the arch is

stallation also includes an illuminated track diagram in the station equipment giving the position of all trains with respect to the signals and the tunnels. The Big Sandy line has been equipped with single track automatic signals since 1919 and the same signals were used in the second



Much of the New Second Track Was Located in the Side Hill

track installation with the exception of the release of the control relays, the bracket type signals and such other apparatus as was unnecessary for the double track operation.



Masonry Plan Showing Manner of Carrying Second Track over Gragston Creek

laid with vitrified brick backed with roofing felt and asphaltum.

The gauntletted tunnels are protected by interlocked signals and derails under the control of an operator located at the Kermit station about midway between Tunnels 1 and 3. The signals are of the three-position, semaphore, upper quadrant type mounted on a bracket post. The in-

On the new double track installation, the signals were located approximately 4,500 ft. apart on each track and are operated by an a.c. floating battery system as were the tunnel signals also. Disc type switch indicators were installed at all main line switches, and afford three-block protection. A new pole line was built between Naugatuck and Kenova to carry a three-phase transmission line and



the switch indicator control wires. Between Naugatuck and Glenhayes power is furnished by a local power company at 6,600 volts which is stepped down to 4,400 for the signal transmission line. Between Glenhayes and Kenova, the power is furnished by another company at 2,200 volts and this was stepped up to 13,200 volts, primarily to furnish sufficient power to operate the water softening plant and coaling station at Pritchard where the load is quite heavy. The signal transmission line also furnished power for other pumping facilities and station and switch lamp lighting.

### Bridges and Highways

The work included the reconstruction of four bridges and one viaduct and the building of three under-crossings and a considerable mileage of new highways in order to eliminate a large number of grade crossings. The old bridges were single track plate girder spans supported on high masonry abutments backed by fills. The widening and reconstruction of the old abutments to taken care of the additional track and the increased embankment behind them gave every indication of being a troublesome and expensive piece of work, and to get around this, a simple and effective plan was utilized. The center line of the old single track was taken as the center line of the new double track and two new abutments were constructed about 50 ft. back of the original masonry. The new abutments were of concrete, reinforced with old rail and carried on piling. The additional embankment placed for double track was thus retained by the new abutments, the overflow around the ends assuming an angle of repose before reaching the old masonry and without placing any additional loading on it. The old stone back wall and bridge seat course was removed at each abutment and replaced with concrete upon which the end bearings of the additional or two end spans were directly supported.

The bridge seat for the channel span was too narrow to carry the four girders and to overcome this, a steel grillage consisting essentially of five 15-in., 50-lb. I-beams was placed upon the new concrete. The old girders were then shifted over to one side and the new girders placed, all four being supported on the grillage with the two outside ones, in effect, cantilevered out from the old masonry abutments.

The double tracking of the Big Sandy was carried out under the direction of W. P. Wiltsee, chief engineer, and F. P. Turner, principal assistant engineer. The work in the field was under the direct supervision of C. E. Armstrong, assistant engineer. The contractors on the work were the Wallon Construction Company, Harry M. Waugh, W. W. Boxley & Company, Morris, Gray and Hunter and Walton Suddeth Company.

## Sprague Automatic Train Control on the N. Y. C.

**E.** H. DE GROOT, JR., on behalf of the Interstate Commerce Commission, has written to C. C. Paulding, assistant vice president of the New York Central, presenting certain criticisms and comments on the Sprague universal type auxiliary train control system which has been installed on two passenger tracks between Hoffmans, N. Y., and Fonda, 20 miles. The criticisms and comments are set forth under five heads as follows:

"1. The track magnet may be displaced or removed without affecting the operation of the signal system, and,

under these conditions a stop signal and an automatic brake application would not result at the signal and application magnet in the rear. While the weight and form of these magnets, and the method of fastening employed, make displacement unlikely, they nevertheless are located between the track rails where they are subject to being struck by dragging parts of equipment.

"2. The magnetic receiver on the locomotive must respond to track impulses at all speeds up to the maximum possible, and the equipment company has a standard of adjustment which it is essential shall be insured through maintenance either by the equipment company or by the railroad acting under instructions of the equipment company, and that this receiver shall be maintained in a sealed condition. This paragraph is not based upon anything observed in connection with this particular installation, but is included on account of its importance.

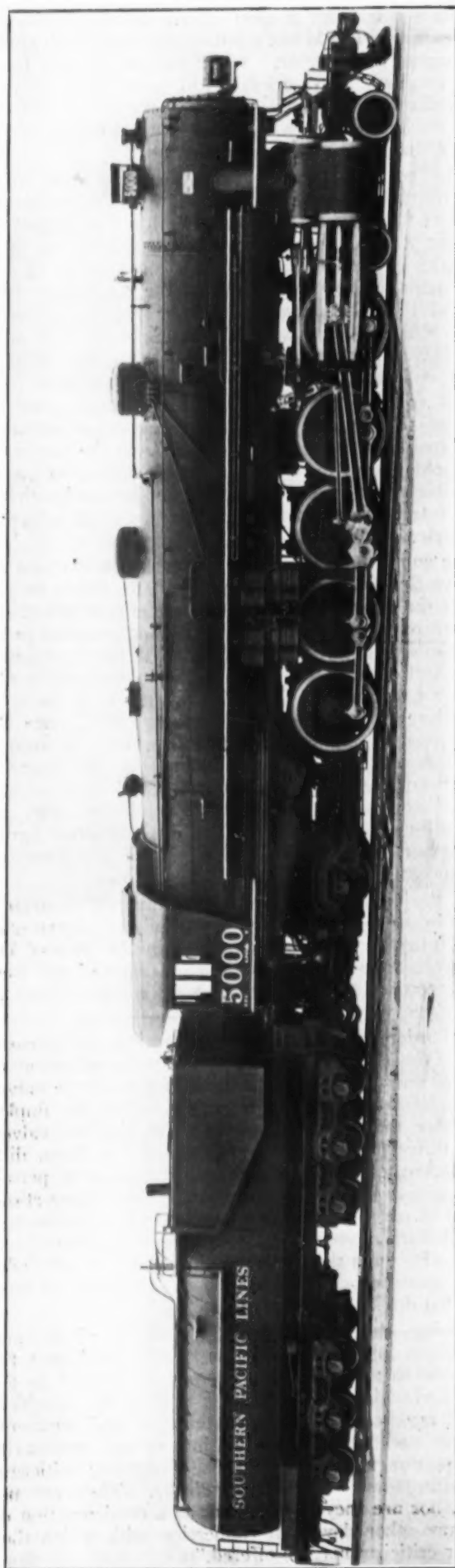
"3. All contacts of the electrical apparatus must be maintained in accurate adjustment; governor contacts must be maintained as nearly as possible to the predetermined speed limits; the warning buzzer must give a distinct audible sound; grounds, crosses and breaks in wiring must be guarded against to insure the electrical integrity of the device.

"These suggestions are based in part upon the case of locomotive 2633 which on June 18, 1925, failed to get a reset at the clear home signal at Amsterdam and at six subsequent reset magnets, the trouble being assumed to be due to a poor contact on the outside of the locomotive receiver, and to a broken wire in the cable between the locomotive and tender. They also are made in the light of the failure of the buzzer on locomotive 2677, June 18, 1925, to give the engineman an opportunity to acknowledge at stop signals, notwithstanding the fact that he was alert and ready to prevent the application of the brakes at stop magnets; also because of the range of several miles on either side of the predetermined figure in connection with the operation of the governor on various locomotives, etc.

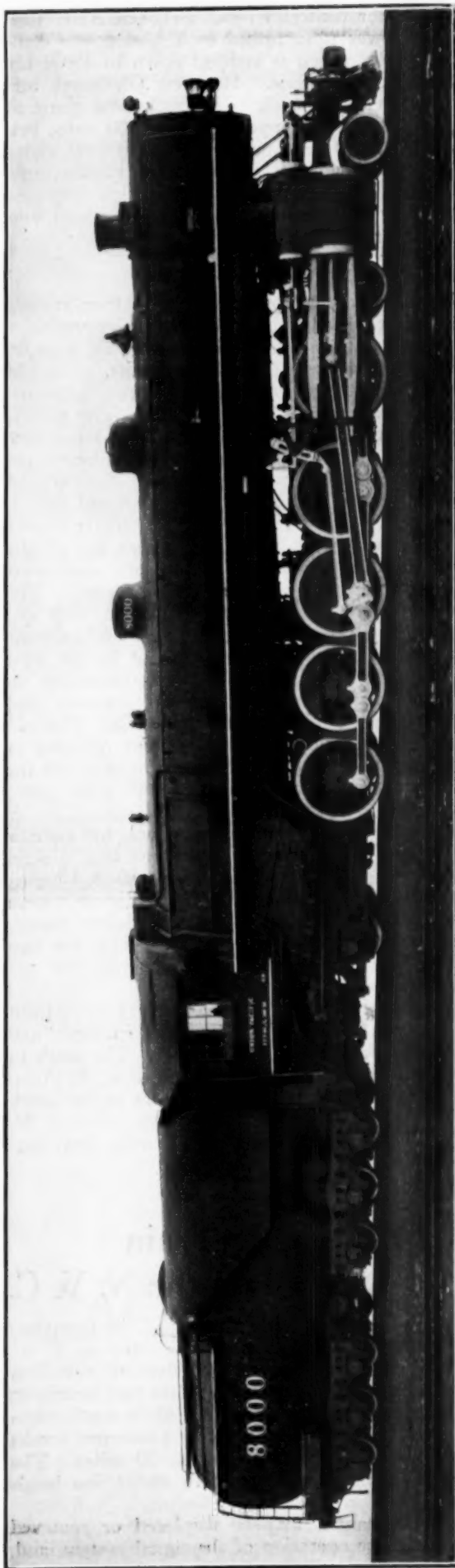
"4. If the oil reservoir is to be maintained separately from the brake valve head, as now installed, it is essential that the integrity of the connecting pipe be insured because excessive leakage might, and breakage of this pipe or its connections would result in a false clear failure at a stop indication point.

"5. In order to insure proper operation and prevent potential false clear failures, the pneumatic equipment of this device must be supplied with clean air and the valvular parts of the oil reservoir supply valve, the duplex service valve, the capacity charging valve, the vent valves, and the differential valve be maintained free from dirt, scale, oil-gum, etc., and in such adjustment as to permit of their proper sequential operation. These suggestions are based in part upon conditions observed on locomotive 2676 in Selkirk roundhouse for extensive repairs on June 18, 1925, also upon the understanding that some difficulty has been experienced as a result of dirt, gum or scale causing the duplex service valve to lag."

Continuing, the letter says: "The object of this and similar inspections is that of constructive criticism; the pointing out of such matters as may be helpful to the carrier in checking an installation against the specifications and requirements of the commission, and comments concerning such other related points as our necessarily brief inspection may develop. The foregoing criticisms and comments are offered accordingly. They are not intended, nor are they to be taken, as a condemnation of this or any other device in connection with which they or similar criticism may be offered."



Southern Pacific, Three Cylinder, 4-10-2 Type Locomotive which Develops a Tractive Force of 83,500 lb. at 70 Per Cent Cut Off and 95,700 lb. with the Booster, Making It the Most Powerful Non-Articulated Locomotive Yet Built



Union Pacific, Three Cylinder, 4-10-2 Type Locomotive which Develops a Tractive Force of 78,000 lb. at 85 Per Cent Cut-Off and 210 lb. Boiler Pressure—Total Weight of Locomotive, 405,000 lb. and with Tender 647,500 lb.



# Three-Cylinder 4-10-2 Locomotives for the S. P. and U. P.

*Tractive force of S. P. with booster is 95,700 lb. and that of  
U. P. with no booster is 78,000 lb.*

**A** NEW development in locomotive wheel arrangement was recently effected when the American Locomotive Company, New York, delivered to the Southern Pacific 16 three-cylinder locomotives of the 4-10-2 type and one of the same type to the Union Pacific. These locomotives are a development from the 2-10-2 type in which the two-wheel leading truck has been replaced by a four-wheel truck.

The Southern Pacific locomotives, which will be known on that road as the Southern Pacific type, are used for hauling passenger and freight trains over the Sierra Nevada mountains where the maximum grade is 2.2 per cent. The Union Pacific locomotive, which will be known as the Union Pacific Overland type, has been operated for some time on the western end of the road and its performance is also to be carefully observed on all the other lines of the system: namely, the Los Angeles & Salt Lake, Oregon Short Line and the Oregon-Washington Railroad & Navigation Company.

The Southern Pacific locomotives weigh 442,000 lb., of which 316,000 lb. is on the drivers, 65,500 lb. on the front truck and 60,500 lb. on the rear truck. They carry 225 lb. boiler pressure; the cylinders are 25 in. in diameter, the strokes being 32 in. outside and 28 in. inside, and the driving wheels are 63½ in. in diameter. With a maximum cut-off of 70 per cent, they develop a tractive force of 83,500 lb., which is increased to 95,700 lb. by the trailer booster. These are the most powerful non-articulated locomotives yet built. They burn oil and are equipped with Worthington feedwater heaters.

The Union Pacific locomotive weighs 405,000 lb., of which 288,500 lb. is on the drivers, 60,000 lb. on the front truck and 56,500 lb. on the rear truck. It carries 210 lb. boiler pressure and, like the Southern Pacific locomotives, the cylinders are 25 in. in diameter. The stroke of the outside cylinders, however, is 30 in., while that of the inside cylinder is the same as on the Southern Pacific locomotives. The driving wheels are 63 in. in diameter. With a maximum cut-off of 85 per cent a tractive force of 78,000 lb. is developed. Semi-bituminous coal is used as a fuel and is fired with an Elvin stoker.

## Boiler Equipment

The boilers of these locomotives do not differ materially from the usual type of design. The overall length of the Union Pacific boiler is 49 ft. 7-7/16 in., while that of the Southern Pacific is 49 ft. 1¾ in. The other general dimensions of the Union Pacific boiler are slightly smaller than those of the Southern Pacific. The boilers of the locomotives of both companies are equipped with 50-unit Type superheaters.

In the Southern Pacific locomotives the Bradford front end throttle is used which is located in the superheater smokebox between the superheater and the main steam cylinders. This provides superheated steam for operating auxiliaries, such as the air compressors, feedwater heater, headlight generator, oil atomizer and the blower. Two Westinghouse cross-compound air compressors are mounted on the right side of the locomotive beneath the

running board, while on the Union Pacific the same size New York air compressors are mounted on the left side of the locomotive.

## Running Gear

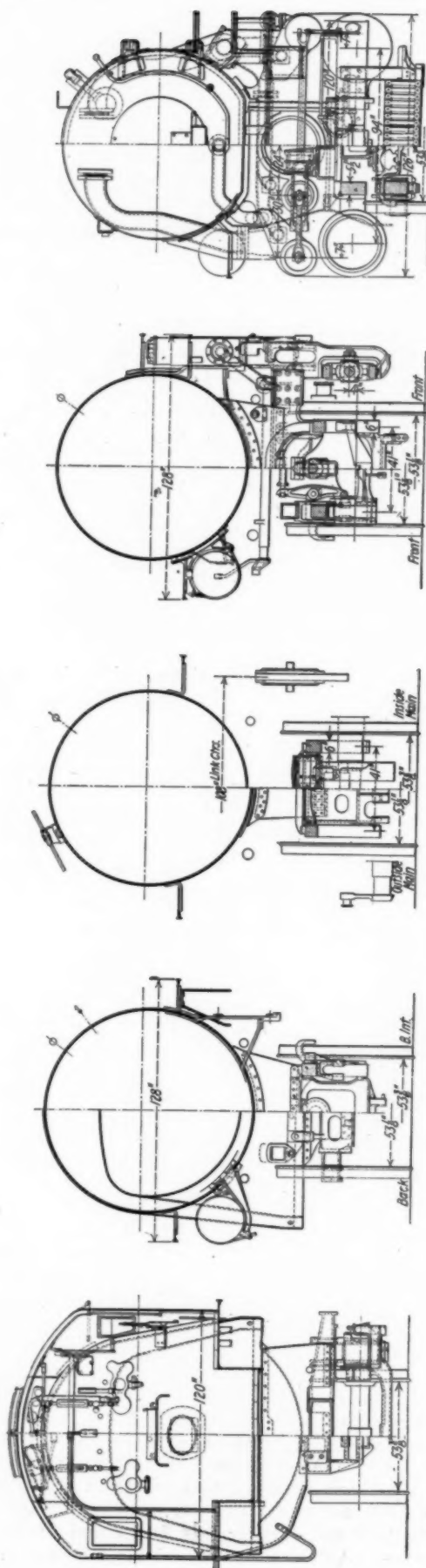
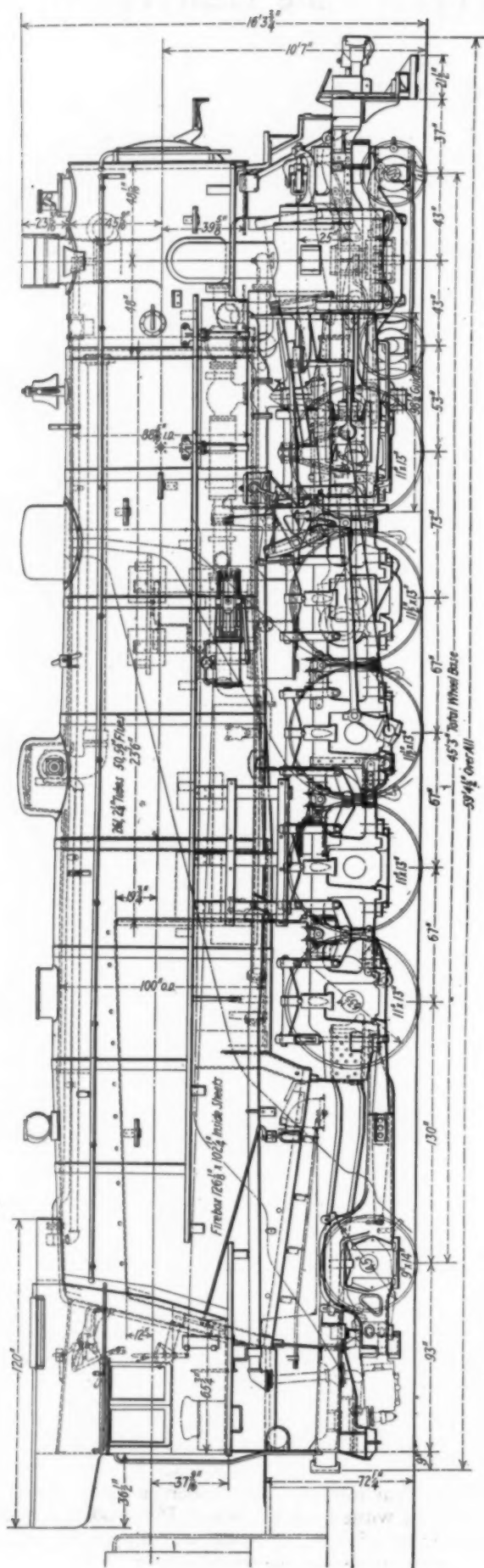
Steam distribution is controlled by the usual outside valve gear. The valve stems of the two outside steam chests are extended and are connected just ahead of the chests by the same arrangement of levers used to operate the valve for the third cylinder on the three-cylinder locomotives previously built by the American Locomotive Company. The valve chambers of these locomotives are bushed to take 11-in. piston valves. They are operated by the Walschaert gear, controlled by the Alco Type E power reverse gear on the Southern Pacific engines and by the Franklin precision gear on the Union Pacific locomotive.

The middle main rod of a three-cylinder locomotive is rather difficult to get at for repairs. In order to reduce the wear of the bushings to a minimum, these rods are provided with an adjustable front end with rotor bushings and a strap back end with floating bushings. The back bushing, which fits over the crank axle of the second pair of drivers, is divided into three parts. It contains four rows of 5/16-in. holes, 12 holes in each row, alternately spaced. The holes are countersunk ¾ in. on the outside. This arrangement provides for equal distribution of the lubricant as the bushing moves in its fit around the pin. The strap dovetails on the body of the rod and is held in place by three 1¾-in. bolts tapered 1/16 in. in 12 in. Two nuts are put on the end of each bolt which are prevented from coming off by No. 4 taper pins, 2½ in. long. The weight of the rod is reduced by an opening through back end of the rod.

The cylindrical tenders of these locomotives are supported by Commonwealth cast steel frames, the weight of which is carried on two six-wheel trucks made by the same company. The Franklin radial buffers are used between the tender and locomotive. The Westinghouse N-11 draft gear is used on the Southern Pacific tenders and the Miner draft gear on the Union Pacific tender. McLaughlin joints are used between the engine and tender for the steam and air connections on these locomotives.

The principal dimensions and data for the two locomotives are shown in the following table:

	Union Pacific	Southern Pacific
Type of locomotive.....	4-10-2	4-10-2
Service .....	Passenger	Passenger
Cylinders, diameter and stroke	{ 2—25 in. by 30 in. 1—25 in. by 28 in.	{ 2—25 in. by 32 in. 1—25 in. by 28 in.
Valve gear, type.....	Walschaert	Walschaert
Valves, piston type, size.....	11 in.	11 in.
Maximum travel .....	6¾ in.	6 in.
Outside lap.....	1¾ in.	1½ in.
Exhaust clearance.....	None	1/16 in.
Lead in full gear.....	3/16 in.	3/16 in.
Cut-off in full gear, per cent .....	85	70
Weights in working order:		
On drivers .....	288,500 lb.	316,000 lb.
On front truck .....	60,000 lb.	65,500 lb.
On trailing truck .....	56,500 lb.	60,500 lb.
Total engine.....	405,000 lb.	442,000 lb.
Tender .....	242,500 lb.	244,000 lb.





# Nickel Plate Hearing Concluded on August 1

Wheel bases:	Union Pacific	Southern Pacific
Driving .....	22 ft. 6 in.	22 ft. 10 in.
Rigid .....	16 ft. 6 in.	16 ft. 9 in.
Total engine.....	44 ft. 1 in.	45 ft. 3 in.
Total engine and tender...	82 ft. 5 in.	87 ft. 3 1/4 in.
Wheels, diameter outside tires:		
Driving .....	63 in.	63 1/2 in.
Front truck.....	30 in.	30 in.
Trailing truck.....	45 in.	45 1/2 in.
Journals, diameter and length:	and sec. 11 in. by 12 in.	and second 11 1/2 in by 13 in.
Driving, main.....	12 in.	13 in.
Driving, others.....	10 in. by 12 in.	11 in. by 13 in.
Front truck.....	6 1/2 in. by 12 in.	7 in. by 12 in.
Trailing truck.....	9 in. by 14 in.	9 in. by 14 in.
Boiler:		
Type .....	Inverted wagon top	Inverted wagon top
Steam pressure.....	210 lb.	225 lb.
Fuel, kind.....	Semi-bituminous	Oil
Diameter, first ring inside.	86 1/4 in.	88 5/16 in.
Firebox, length and width.	126 in. by 96 in.	126 1/8 in. by 102 1/4 in.
Height mud ring to crown sheet, back.....	75 1/8 in.	70 in.
Height mud ring to crown sheet, front.....	87 1/8 in.	88 in.
Arch tubes, number.....	4	None
Combustion chamber length.	60 1/4 in.	74 in.
Tubes, number and diameter.	250—2 1/4 in.	261—2 1/4 in.
Flues, number and diameter	50—5 1/2 in.	50—5 1/2 in.
Length over tube sheets...	23 ft. 6 in.	23 ft. 6 in.
Tube spacing.....	13/16 in.	13/16 in.
Flue spacing.....	13/16 in.	13/16 in.
Grate area.....	84 sq. ft.	89.6 sq. ft.
Heating surfaces:		
Firebox and comb. chamber.	362 sq. ft.	390 sq. ft.
Arch tubes.....	28 sq. ft.	.....
Tubes .....	3,497 sq. ft.	3,600 sq. ft.
Flues .....	1,685 sq. ft.	1,686 sq. ft.
Total evaporative.....	5,522 sq. ft.	5,676 sq. ft.
Superheating .....	1,505 sq. ft.	1,500 sq. ft.
Comb. evaporative and superheating .....	7,027 sq. ft.	7,176 sq. ft.
Special equipment:		
Brick arch.....	Yes	Yes
Superheater .....	Yes	Yes
Feedwater heater.....	No	Yes
Stoker .....	Yes	No
Booster .....	No	Yes
Tender:		
Style .....	Cylindrical	Cylindrical
Water capacity.....	12,000 gal.	12,000 gal.
Fuel capacity.....	20 tons	(oil) 4,400 gal.
General data estimated:		
Rated tractive force, 85 per cent .....	78,000 lb.	76 per cent—83,500 lb.
Weight proportions:		
Weight on drivers ÷ total weight engine, per cent.	71.2	71.6
Weight on drivers ÷ tractive force.....	3.69	3.61
Total weight engine ÷ comb. heat. surface.....	57.7	61.5
Boiler proportions:		
Tractive force ÷ comb. heat. surface.....	11.11	11.63
Tractive force X dia. drivers ÷ comb. heat. surface .....	6.99	7.38
Firebox heat. surface ÷ grate area.....	4.31	4.35
Firebox heat. surface, per cent of evap. heat surface .....	6.56	6.87
Superheat, surface, per cent of evap. heat. surface .....	27.21	26.41
Comb. heat surface ÷ grate area .....	83.6	79.9

PRESENTATION of testimony on behalf of the Nickel Plate in support of its application to the Interstate Commerce Commission for authority for unified operation of the Nickel Plate, Chesapeake & Ohio, Erie and Pere Marquette was concluded on August 1 except for such further cross-examination of the Nickel Plate witnesses as may be desired by counsel for the protestants, and an adjournment was taken until September 8.

An adjournment until sometime in September had been asked by H. W. Anderson, counsel for the protesting stockholders of the Chesapeake & Ohio, after W. A. Colston, general counsel for the Nickel Plate had announced that he was about to introduce his last witness. Mr. Colston opposed an adjournment to a date later than August 15 and Commissioner Meyer said the commission would decide. Mr. Anderson objected to the idea of holding hearings in August, saying no court would do such a thing and also said he would require time to study the exhibits presented by the Nickel Plate witnesses, mainly at his request with a view to further cross-examination and the presentation of his own case with his own witnesses. Albert I. Stiles, an intervener, said he wanted to cross-examine J. J. Bernet, president of the Nickel Plate, further, and that he would also want to question W. L. Ross, senior vice-president of the Nickel Plate.

Practically the entire morning session on July 31 was devoted to his questioning of Mr. Bernet regarding a contract made by the Van Sweringens with Mr. Ross in 1922, in connection with an agreement made with him for the purchase of a majority of the stock of the Clover Leaf from persons Mr. Ross represented and others. Mr. Ross had been president and was then receiver of the Clover Leaf and the contract provided for him employment by the Van Sweringens at a salary of \$50,000 a year from the termination of the receivership until 1927, the contract to be assumed by the Nickel Plate after the consolidation with it of the Toledo, St. Louis & Western and the Lake Erie & Western.

The contract also provided that the Clover Leaf should be operated as a separate unit or division for five years, and had been brought into the case by a remark by Mr. Bernet that some features of the proposed economies in accounting after the unification could not be put into effect until the termination of this contract unless it is modified. Mr. Stiles asked if this did not impose a charge of \$200,000 on the public as the cost of the additional accounting. Mr. Bernet said that this was a condition Mr. Ross imposed in connection with the sale of the stock which he represented and that because of Mr. Ross' long experience and connection with the Clover Leaf it was in the best interest of the property that he be retained. This led to questions by Mr. Stiles as to the salaries of the Nickel Plate officers. Mr. Bernet said he received \$65,000 and that W. A. Colston, vice-president and general counsel, and C. E. Denney, vice-president and general manager, each received \$30,000. He said M. J. Van Sweringen as vice-president does not devote his time exclusively to the railroad, and that J. R. Nutt, C. L. Bradley and Otto Miller, as vice-presidents, do not devote their time to the railroad nor receive any salaries from it. Mr. Bernet was also further cross-examined by Mr. Anderson, after which the concluding witness for the Nickel Plate took the stand, Henry C. Royal of Ernst & Ernst, who submitted and explained a large number of statistical exhibits.

THE TOTAL EXPORTS OF BITUMINOUS COAL from the United States during June, 1925, amounted to 1,435,973 long tons as compared with 1,356,933 tons in April and 1,426,979 tons in June, 1924, according to the Coal Division, Department of Commerce. Exports to Canada amounted to 1,038,464 tons in June and 1,001,799 tons in May and were the heaviest shipments to that destination during the current year.

RE-ESTABLISHMENT OF ITS REINDEER INDUSTRY in Baffin Land is being undertaken by the Hudson Bay Company, which has engaged the services of W. T. Lopp, until recently of the Alaskan division of the United States Bureau of Education, to spend a year in the north putting this industry on a firm basis. At the present time there are approximately 700 reindeer in the herd, which were sent to Baffin Land four years ago by the Hudson's Bay Officials at the suggestion of Stefansson, the explorer.

## Report on Automobile Accident at Gaithersburg, Md.

THE Interstate Commerce Commission has issued a report, signed by W. P. Borland, director of the bureau of safety, on the death of two women on a crossing at Gaithersburg, Md., on March 14, when their automobile was struck by a westbound passenger train of the Baltimore & Ohio, train No. 37. The investigation was made in response to a request from friends of the victims, who advanced the theory that the use of a green light by the crossing watchman, to give a stop signal to traffic on the highway, was an element of danger.

The highway, north and south, lies at right angles to the railroad and there is a good view for a long distance. For 150 ft. before crossing the track a driver has a clear view of approaching trains for a distance of 1,500 ft. to the east.

The automobile was driven by a woman about 30 years old who was a member of the faculty of Hood College, Frederick, Md.; and her companion was a member of the same faculty.

The accident happened at 6:30 p. m., about dusk. A driver approaching from the south encounters, 200 ft. short of the crossing, a flashing red signal (constant) which is to give warning that a railroad crossing is being approached; then, 60 ft. from the crossing, another signal, two red flashing lights, controlled automatically by track circuit, giving notice of the approach of a train. From 7 a. m. to 9 p. m. there is a watchman on duty who shows a disk in the daytime and at night swings a green lantern at the approach of a train.

The fireman of the train saw the automobile approaching, making no sign of slackening speed or that the train was observed. The locomotive headlight was burning brightly, the bell was ringing, and the engineman had sounded the whistle-signal for the crossing. The crossing watchman saw that the automobile was not being stopped and he swung his light more violently, and shouted to the driver.

This woman had often driven over this crossing before and was reputed a careful driver. A jury found that the two women came to their death by reason of their own negligence.

The inspector rejects the theory that the driver stepped on the accelerator instead of the brake; also the conjecture that she was racing with the train. And, besides the warning red lights, there was a clear view of the approaching train for ample distance from the crossing to enable her to stop. Inquiry as to whether the woman had any special reason for haste developed no evidence on that point.

The complaint about the green signal is based on the fact that green lights are now used in cities to signal "Go" to drivers on the highways; but, says the report, even if this theory has a basis, the fact remains that the approaching train came into full view when the automobile was far enough back to be stopped. The Baltimore & Ohio has used green lights for this function for many years.

The inspector found that the Public Utilities Commission of Maryland had protested against the continued use of green lanterns.

Summing up his conclusions, the inspector finds that the flash-light signal, 60 ft. from the crossing, provides a distinctive aspect which is easily recognized. "Other signals, if used, should be located so as not to interfere with the clear view of the flash-light signals at the cross-

ing." A watchman using a disk "adds somewhat to the protection" of the crossing, but with a green light he "adds little or nothing and quite possibly detracts from the protection afforded by the automatic signals."

The inspector recommends that serious consideration be given to the separation of grades at this place; and says "that until grades are separated the addition of gates is desirable."

## Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loadings exceeded the million-mark by a greater margin during the week ended July 25 than in the previous week, further increasing the lead that loadings to date have this year over 1924 and 1923. The total of 1,029,603 cars for the week was 18,633 cars larger than in the week ended July 18, 103,294 larger than in the corresponding week of last year and 11,812 smaller than in the corresponding week of 1923.

Loadings were larger in all districts than last year and lower, as compared with 1923, in the Eastern, Allegheny, and Northwestern districts. Loadings of grain and livestock were slightly lower than in either 1923 or 1924, but loadings of l. c. l. and miscellaneous traffic were considerably larger. Loadings of coal, coke, forest products and ore were larger than last year but smaller than in 1923. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

### REVENUE FREIGHT CAR LOADING

Week Ended Saturday, July 25, 1925.

Districts—	1925	1924	1923
Eastern .....	241,674	217,650	249,869
Allegheny .....	209,800	187,708	226,816
Poconos .....	54,025	41,839	44,640
Southern .....	142,852	127,681	133,299
Northwestern .....	156,738	138,964	172,689
Central western .....	154,652	147,415	150,365
Southwestern .....	69,862	65,052	63,737
Total western .....	381,252	351,431	386,791
Commodities—			
Grain and grain products .....	48,946	49,861	53,157
Live stock .....	26,450	27,218	31,310
Coal .....	178,030	146,652	194,816
Coke .....	9,185	7,076	14,265
Forest products .....	70,134	66,109	77,815
Ore .....	66,494	54,523	85,633
Misc., l. c. l. .....	253,526	238,429	240,135
Miscellaneous .....	376,838	336,441	346,284
Total .....	1,029,603	926,309	1,041,415
July 18 .....	1,010,970	930,713	1,029,425
July 11 .....	982,809	909,983	1,019,809
July 4 .....	864,452	757,904	850,082
June 27 .....	991,341	908,251	1,021,471
Cumulative total, 30 weeks .....	28,185,462	26,710,061	27,946,237

### Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended July 25 totaled 51,076 cars as compared with 51,123 in the previous week and 49,751 cars in the same week last year. Coal was 3,079 cars lighter than last year, while lumber, pulpwood, other forest products and miscellaneous freight were heavier by 501, 395, 513 and 2,173 cars respectively.

Commodities	Total for Canada			Cumulative totals to date	
	July 25, 1925	July 18, 1925	July 26, 1924	1925	1924
Grain and grain products .....	4,667	4,716	4,295	173,048	238,485
Live stock .....	2,051	2,117	2,110	65,093	64,240
Coal .....	1,944	2,080	5,023	100,677	144,779
Coke .....	261	316	176	8,253	7,039
Lumber .....	3,998	3,957	3,497	103,074	108,316
Pulpwood .....	2,442	2,458	2,047	89,381	90,769
Pulp and paper .....	1,883	1,800	1,779	61,046	59,937
Other forest products .....	2,752	2,923	2,239	88,106	82,199
Ore .....	1,482	1,718	1,487	39,349	35,852
Merchandise, l. c. l. .....	15,444	15,369	15,119	446,585	424,913
Miscellaneous .....	14,152	13,669	11,979	346,383	342,920
Total cars loaded .....	51,076	51,123	49,751	1,520,995	1,599,449
Ttl. cars recd. from connections .....	34,169	32,755	27,871	993,600	968,989



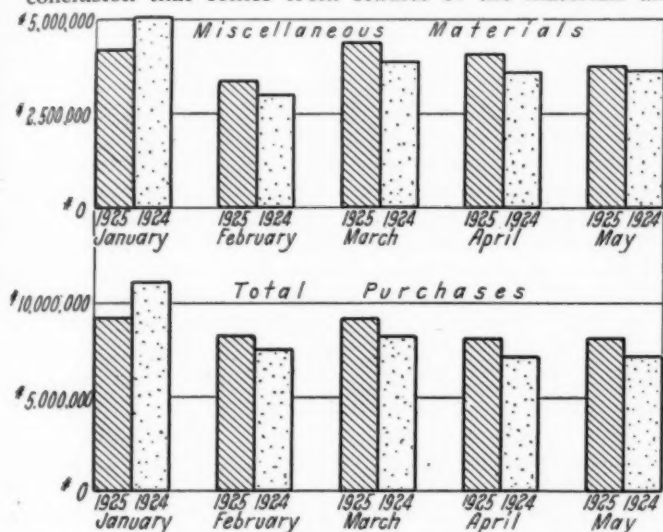
# Are the Railroads in the Markets?

*Studies of purchasing operations show volume of buying equal to last year*

**N**EXT to the weather probably the most frequent topic of conversation in railway supply circles is the degree of activity of railway purchases. With steel mills reporting a lower rate of production than last year and car and locomotive plants operating considerably below capacity, the large car loadings appear scarcely less than a paradox. That the impression which prevails in some quarters that railway buying is at a low ebb is not correct, however, as to railway purchasing generally is a conclusion that comes from studies of the materials and

pendent \$12,049,391 for materials and supplies during the first five months of 1925, or about 92 per cent as much as in the same period of 1924, when the total (excluding stationery and commissary supplies) was \$13,124,422; the only considerable falling off in expenditures being for miscellaneous supplies which totaled \$4,593,682 for the first five months of 1925, or 75 per cent as much as in the same period of 1924 when they reached \$6,078,117.

The second road of the three immediately under consideration is a western road which has enjoyed a substantial and diversified business but which has been on the alert to keep expenditures for materials and supplies well under control. This road expended a total of \$15,847,170 for materials and supplies (not including stationery and commissary) during the first five months of 1925, or 16 per cent more than in the same period of 1924 when the total expenditures were \$13,592,594. An increase from \$783,092 to 1,352,241 is shown in the expenditures for lumber and a decrease from \$744,791 to \$322,617 for rail, leaving an expenditure of \$8,220,387 during the first five months of 1925 for miscellaneous materials and supplies, or an increase of 60 per cent over the amount

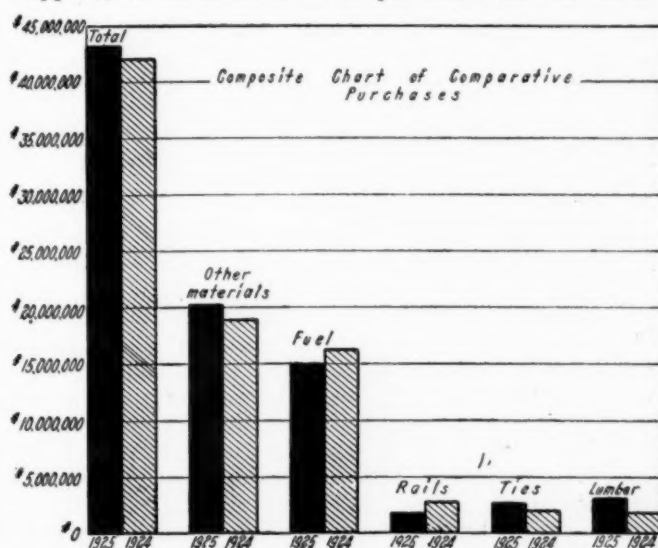


Charts Showing How the Combined Monthly Purchases of Three Typical Roads Compared with Each Other

supplies actually purchased by the railroads for the maintenance and operation of their properties. Rather, it can be said that the volume of buying so far this year has been at least equal to, and has probably been greater, than, the volume for the same period last year, a year in which the total expenditure excluding fuel for materials and supplies for operation and maintenance exceeded \$1,130,000,000 for the Class I roads alone.

For the purpose of this study the facts regarding the purchases of materials and supplies of five representative Class I railroads with an aggregate of 44,000 miles of main lines were secured for this year as compared with last year. The records from three of the roads enable their total expenditures to be determined for each of the first five months of 1924 and 1925, and also their monthly expenditures for lumber, ties, rail, fuel and miscellaneous supplies. The records from a fourth road also deal with expenditures, although not in as complete form, while the fifth road's records disclose the value of issues made from stock on hand during this period. In addition to these data the records of one of the roads reporting expenditures by classes provide similar information on the value of orders placed during the months in question.

Among the three roads whose completely classified expenditures were available for the period in question, is a western road whose limited income on the one hand and prior accumulations of supplies on the other hand fostered a policy of retrenchment in all branches of purchasing this year. Notwithstanding that this road ex-



A Composite Chart of the Purchases of Four Typical Roads During the First Five Months of 1925

paid out during the same period last year when the expenditures reached \$5,164,716.

The third road of the group under consideration is a prosperous one with a steadily increasing business, but on which close attention has been given within the year to the reduction of surplus stock. A comparison of expenditures, however, develops that they were almost identical in both years, notwithstanding the absence during this year of a large car rebuilding program that was carried out in the previous year. The total expenditures of this road aggregated \$15,267,951 for the first five months of 1925 as compared with \$15,369,504 during the same period of 1924, while the expenditures for miscellaneous materials were \$7,681,757 during 1925, as compared with \$7,653,730 in 1924, the only marked difference between the two periods occurring in the payments for lumber,

which were about three times greater in 1925, and in fuel.

When the expenditures for these three roads are combined, it is seen that they spent a total of \$43,134,498 during the first five months of 1925, as compared with a total of \$42,086,544 in 1924, or an increase of about two per cent. Of this figure the sum of \$3,110,928 represents the amount paid for lumber, which was a 90 per cent increase over the expenditures of the previous year, when \$1,920,308 was expended. The combined expenditure for ties was \$2,657,372, or an increase of 25 per cent over that in the previous year, when it was \$2,125,623. The expenditures for rail totaled \$1,786,053, as compared with \$2,774,133 for the corresponding period of 1924, a decrease of 40 per cent, while the expenditures for fuel were \$15,084,319, as compared with \$16,335,877 for the previous period, leaving as the combined expenditures for miscellaneous materials and supplies during the first five months of this year the sum of \$20,495,826, which is an increase of about six per cent over the corresponding expenditures for 1924, of \$18,896,563.

#### EXPENDITURES OF THREE ROADS FOR MATERIAL IN 1924

	Lumber	Ties	Rail	Fuel	Other material	Total
Jan. ....	521,154	457,854	622,325	4,397,292	5,109,560	11,108,185
Feb. ....	531,201	472,063	152,451	3,547,696	3,081,399	7,584,810
Mar. ....	397,231	441,258	104,198	3,531,075	3,823,402	8,297,164
Apr. ....	343,370	439,219	796,179	2,693,774	3,572,951	7,845,493
May ....	327,352	349,229	1,098,980	2,166,040	3,309,251	7,250,852
Total .....	1,920,308	2,159,623	2,774,133	16,335,877	18,896,563	42,086,504
Road No. 4..	3,535,230			5,019,081	10,118,460	15,135,542
Gross .....	7,615,161			21,354,958	29,015,023	57,222,046

#### EXPENDITURES OF THREE ROADS FOR MATERIAL IN 1925

	Lumber	Ties	Rail	Fuel	Other material	Total
Jan. ....	738,071	270,263	220,131	3,707,714	4,349,058	9,285,237
Feb. ....	542,075	399,663	58,735	3,336,656	3,856,561	8,193,690
Mar. ....	630,258	521,829	266,089	3,136,048	4,623,163	9,177,387
Apr. ....	608,475	785,824	535,483	2,165,829	4,107,795	8,203,406
May ....	592,049	679,793	705,615	2,738,072	3,559,249	8,274,778
Total .....	3,110,928	2,657,372	1,786,053	15,084,319	20,495,826	43,134,498
Road No. 4..	3,523,052			4,567,431	9,543,895	14,111,326
Gross .....	9,291,352			19,651,740	30,039,721	57,245,824

The fourth road reporting expenditures is a representative northwest road which has been struggling for several years under a variety of adverse conditions which have demanded the utmost caution in all expenditures. The total expenditures of this road for the first five months of 1925 were 7 per cent less than in the corresponding period of 1924, those for lumber and ties were about equal to those in 1924 and those for fuel 10 per cent less than in 1924, leaving expenditures for miscellaneous material in 1925 five per cent less than in 1924.

When these expenditures are combined with the expenditures of the first three roads the result is an aggregate expenditure of \$57,245,824 for all materials and supplies in the first five months of 1925, as compared with an almost identical expenditure of \$57,222,046 in the corresponding period of 1924, and an aggregate expenditure of \$30,039,721 in the first five months of 1925 for miscellaneous materials, or an increase of about 5 per cent over the expenditures of \$29,015,023 in the corresponding period of 1924. Thus, not only did these four roads, with over 32,000 miles of line, spend as much for materials and supplies during the first five months of this year as was expended during the corresponding period of 1924, but these expenditures amounted to approximately \$100,000 per day per road.

In this connection it is interesting to note that while only three roads reported expenditures for stationery and commissary supplies (not included in the above figures) the aggregate expenditure for these supplies on these roads was approximately \$1,800,000 for the first five months of 1925, as compared with approximately

\$1,700,000 for the corresponding period of last year.

The principal objection to records of payments made for materials and supplies in a study of this character are (1), that they are not true reflectors of the business activity in the period when they are made and, (2) that they are still less reliable in reflecting conditions subsequent to their compilation. It is true that with some materials consumed by a railroad, as rails, ties, fuel and lumber, expenditures made today represent payments for supplies ordered several months previous. It should be remembered, however, that in the case of numerous commodities under the head of miscellaneous supplies which, in the aggregate, constitute the bulk of all materials and supplies and for which by far the great volume of orders are placed, the force of this objection is small at best, not only in view of the short time that elapses from the placing of orders to the time of payment, but also because of the pressure to keep surpluses in such stock down to a minimum. Again, the records of payment for even rail, ties, fuel and lumber are of unquestionable value where the records of several roads are considered together, as in this case, and comparative expenditures reported over an extended period.

Whether the record of issues made of material is more reliable than records of expenditures in reflecting such conditions, as of the time of the payments, is open to question. But in the case of miscellaneous material, which must be replenished promptly, it is of established value. It is significant, therefore, to note that on the fifth road involved in this study, whose consumption was reported in terms of issues, instead of expenditures, the issues of miscellaneous materials in the first five months of 1925 were \$3,520,786 or only about 12 per cent less than the issues for the corresponding period of 1924.

This reduction in issues, of itself, might suggest that the conclusions derived from the expenditures of the other roads are in need of modification before they can be said to represent the total number of roads involved in this study or conditions elsewhere. When attention is given to the fact, however, that the total value of orders placed during the first six months of 1925 on one of the roads initially studied was 35 per cent higher than in the corresponding period of 1924 and where the total value of orders placed for miscellaneous materials was 20 per cent higher it is apparent that no further refinement is essential to a representative picture of conditions. The further observation that the trend of prices is in general downward reinforces the conclusion that the volume of business done during the first five months of 1925 was by no means unfavorable.

The most important objection to the use of expenditures during the first five months of the year or even to records of issues or of orders placed is the difficulty of hazarding a conclusion concerning market conditions in the immediate present. In this respect the records for each month prove useful for it is safe to rely on recent records which disclose regularity in makeup and a reasonable consistency with previous periods. This condition exists to a noteworthy degree in the case of miscellaneous supplies, which are the chief consideration in this study, as is evident in the chart where the combined expenditures made during the first five months of this year for all materials and for miscellaneous materials are compared with each other and with the corresponding period for 1924. In the case of miscellaneous supplies, similar relationships are revealed in the records of issues and of orders included in the study. It has also been noticed that on the road reporting values of orders, the orders placed in June of this year show a substantial increase over the orders placed in previous months.



# Great Northern Compared with Other Roads

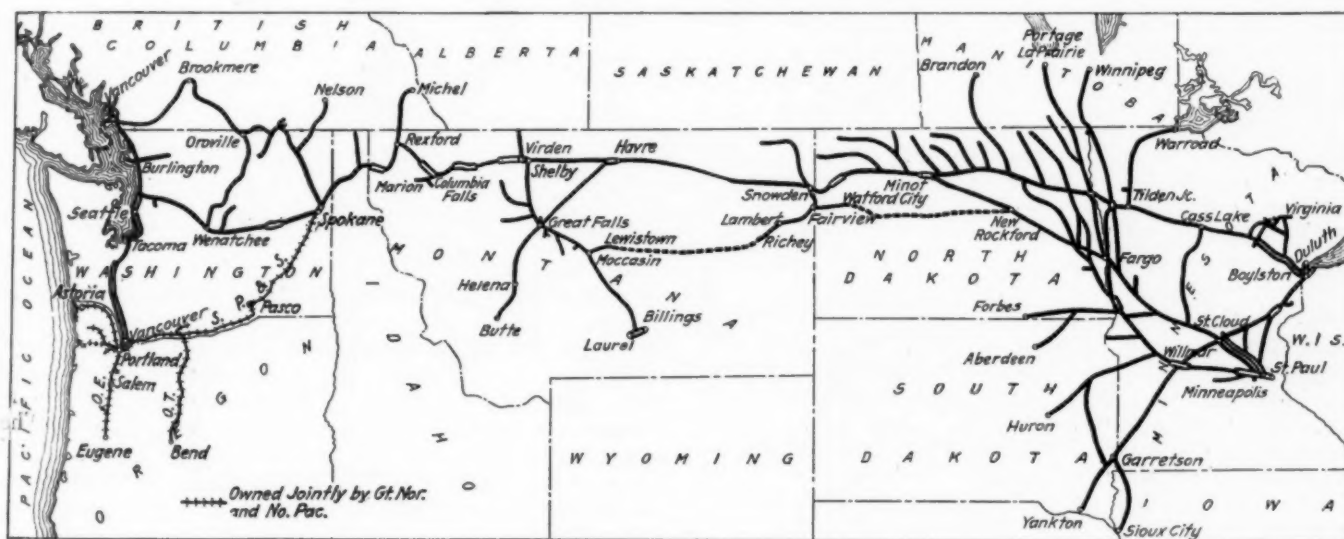
*Has been unable to overcome effects of low rates and slow increase in traffic*

THE Great Northern annual report for 1924 shows net income after charges of \$17,941,600, equivalent to \$7.19 a share on the \$249,558,418 outstanding preferred stock. Net income in 1923 was \$18,067,947, equivalent to \$7.24 a share. The 1924 net income was the lowest with one exception, namely, 1922, for many years of Great Northern history, although it will be noted that the net income for 1924 was only slightly less than that for 1923.

The chief trouble with the Great Northern seems to be nothing else than that it is a northwestern road. This makes it worth while to ascertain how the property may stand in comparison with the other roads in the northwestern region or with the roads in the western district as a whole.

There is presented in Table I a comparison based principally on the data which appeared in the article in

enue per ton per mile in the northwestern region was 46 per cent; in the western district as a whole, 43 per cent, while for the United States as a whole there was an increase of 58 per cent. In revenue ton-miles the northwestern region showed in 1924 as compared with the fiscal year ended June 30, 1916, an increase of only 3 per cent, whereas the western district showed an increase of 21 per cent and the United States an increase of 14 per cent. As a result of this combination of circumstances, chiefly, the net railway operating income of the northwestern carriers in 1924 was 29 per cent less than their standard return during the period of federal control, or their average annual net railway operating income for the three years ended June 30, 1917. The western district as a whole showed a decrease of 7 per cent and the United States as a whole an increase of 9 per cent. In the southern and southwestern regions as



The Great Northern

the *Railway Age* of July 25, entitled "The Trend of, Railway Earnings Shown in Charts," by H. M. Sperry. In that article comparisons were made of the revenue ton-miles and revenue per ton-mile of the several regions for 1923 and 1924 with the figures for the year ended June 30, 1916, and similarly the net railway operating income of the regions was compared with their standard return for operations during the period of federal control. While the Sperry study did not attempt to take sides in the present controversy relative to the reorganization of the Chicago, Milwaukee & St. Paul, which is serving to throw so much light on the situation of the northwestern carriers, figures 2 and 3 of the article apparently did show that it was lack of traffic as much as the unfortunately low rate level which was handicapping the roads in the northwestern region.

Thus, in comparing 1924 with the fiscal year ended June 30, 1916, it was developed that the increase in rev-

a result of substantial increases in traffic and with increases in the rate level about the same or less than that of the northwestern region the increase over the standard return in 1924 was 42 and 41 per cent respectively.

## Rate Increase Only 38 Per Cent

Table I shows how the Great Northern fits into this picture. Its revenue per ton per mile in 1924 is seen to be but 38 per cent in excess of its revenue ton-mile earnings for the year ended June 30, 1916, an increase much below the admittedly small increase for the northwestern region as a whole, likewise below the increase for the western district and substantially below the increase for the country. As concerns Great Northern traffic, in 1924 as compared with 1916 there was an increase of 3.6 per cent—about the same as the northwestern region's increase of 3 per cent but trailing the figure of 21 per cent for the western district and the figure of 14

per cent for the United States. However, whereas in 1924 the northwestern region had net railway operating income 29 per cent less than the standard return, the Great Northern had a decrease of 15½ per cent. This per cent, while showing a better result than the region, was not as satisfactory as was shown by the western district's 7 per cent decrease and not nearly as satisfactory as the United States' 9 per cent increase. The figures in the table include also data for 1923. These figures are better than those for 1924 but the relationships as between the Great Northern and the groupings with which it is compared are about the same as in 1924. In either case the Great Northern has had about the same increase in traffic as the northwestern region. It has had a substantially smaller increase in revenue per ton per mile but it has not suffered so greatly from the standpoint of its net railway operating income as its neighbor roads in the northwest.

#### Is Great Northern Suffering from Lack of Traffic?

These details would seem to indicate that the Great Northern is at the present time suffering from a low rate level and from lack of traffic alike. In some way, however, it has so improved its efficiency of operation that while its net income has suffered in great degree it has not suffered to quite the same extent as have the roads in the northwestern region as a whole.

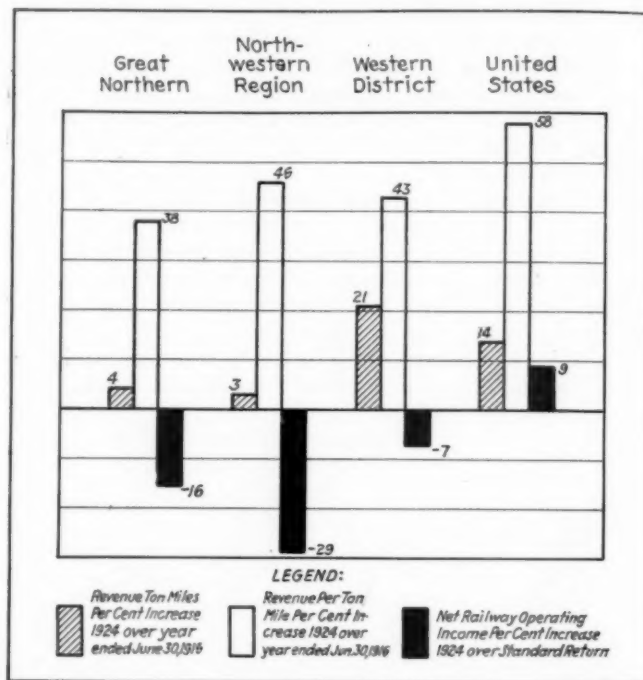
The full significance of the Great Northern's increase of but 3.6 per cent in 1924 as compared with 1916, or of the increase of 12 per cent for 1923, is best understood when it is realized that prior to the war railway traffic on the railroads of this country as a whole used to double in about 12 to 14 years, or on the average of 7 or 8 per cent a year. The year ended June 30, 1916 was the best year in Great Northern's history up to that time. The traffic for the year 1916 has been exceeded in every year since with the exception of three. However, the fact that in 1923 the increase over 1916 was but 12 per cent or about the average of 1½ per cent a year would seem to justify those who speak of the lack of prosperity in the Northwest, of the handicaps of Panama Canal competition or, indeed, it may indicate that the period of expansion in the northwestern region of this country has temporarily ceased. As far as the traffic figures indicate, the situation is not good. As concerns the increase of 38 per cent in rates for the past 8½ years with the increase in costs that has taken place in this time, it is indeed surprising that with this small increase the Great Northern should have been able to come through as well as it has.

#### More Ore—Less Lumber

The Great Northern differs from its two leading neighbors in the northwestern region with respect to its heavy traffic in iron ore on the one hand and its considerably smaller volume of lumber traffic on the other. The ore traffic in 1924 totaled 13,539,021 tons and constituted 42.8 per cent of the total revenue tonnage. This indicates that ore bears about the same relation to Great Northern affairs that coal bears to the operations of coal carrying roads. The 1924 ore tonnage was 23 per cent less than in 1923 but in 1923 the ore tonnage was about the largest in the road's history—the expression "about the largest" being used advisedly because it is only since 1920 that the Great Northern has been reporting freight commodity statistics in its annual reports. The 1923 ore tonnage totaled 17,676,007 and it was 49 per cent of the road's total revenue tonnage. The importance of the ore tonnage is that its volume varies with the prosperity of the steel industry and not with the agricultural prosperity of the Northwest. The steel industry has been rather more prosperous than has agriculture in the North-

west, so it is to be supposed that iron ore, except as its volume has varied with the marked variations in steel production, has been somewhat of a sustaining factor in the Great Northern's general situation. In the recently issued Great Northern annual report, the view is expressed that the ore traffic in 1925 will be about the same as it was in 1924.

In 1924, the Great Northern carried 3,500,672 tons of products of forests whereas the Northern Pacific moved 8,713,309 tons and the Chicago, Milwaukee & St. Paul 10,134,257 tons. In each case the 1924 figures were less than those for 1923. The Great Northern's percentage of products of forests to total revenue tons was 10.5 per



Comparison of Trend of Great Northern Traffic and Earnings

cent while that of the Northern Pacific was 36.3 per cent and that of the Milwaukee 21.5 per cent. It has been fairly generally agreed that the competition of the Panama Canal has been felt most acutely by the northwestern roads with reference to their lumber traffic. Because of the Great Northern's comparatively small proportion of lumber traffic it has been believed that the Great Northern has probably suffered less from Panama Canal competition than have other roads. It is, of course, to be borne in mind that Panama Canal competition has also been pointedly effective with reference to high grade traffic moving westbound in cars otherwise being returned empty for lumber traffic.

However, it was noted above that in a comparison with 1916 the Great Northern increase in traffic has been only about as great as for the northwestern region as a whole. In 1923, the Great Northern moved only 12 per cent more revenue ton-miles than in the year ended June 30, 1916, and in 1924 only 3.6 per cent more. The Northern Pacific moved less revenue ton-miles in either 1923 or 1924 than in 1916. The Milwaukee, inclusive of the Chicago, Terre Haute & Southeastern, carried 14 per cent more revenue ton-miles in 1923 than in 1916, and in 1924 5 per cent more. It apparently is not difficult to explain why the Great Northern and the Milwaukee have had increases in their traffic since 1916—however comparatively slight as compared with pre-war rates of increase or increases in the country as a whole—while the Northern Pacific has had a decrease. The answer is to



be found in the fact that the greater development of the branch line or feeder mileage of the Great Northern and the Milwaukee is in the eastern part of the northwest while the Northern Pacific has developed more in the western part. Whatever may be the cause—greater diversification of agriculture, the ore traffic or whatever else—it appears that the eastern section of the northwest has had a greater growth as far as railway traffic volume is concerned than has the western section.

### The Chicago, Milwaukee & St. Paul's Traffic

At this point a slight digression may be in order. It was noted above that the Milwaukee, including its recently acquired subsidiary, the C. T. H. & S. E., moved 14 per cent more revenue ton-miles in 1923 than in the year ended June 30, 1916. This compared, it will be noted from the figures presented in Table I, with increases of

TABLE I—GREAT NORTHERN TRENDS COMPARED WITH THOSE OF OTHER ROADS IN NORTHWESTERN REGION, WESTERN DISTRICT AND UNITED STATES

Net railway operating income for 1923 and 1924 shown in percentage of standard return. Revenue ton-miles and revenue per ton-mile shown in percentages of figures for year ended June 30, 1916

	Great Northern	Northwestern Region	Western District	United States
Standard return .....	\$28,666,681	\$148,734,272	\$404,692,751	\$906,894,745
1923—Net railway operating income .....	24,731,992	112,236,458	374,556,464	983,736,225
% of standard return...	86.27	75.46	92.55	108.47
1924—Net ry. op. income .....	24,201,287	104,873,704	378,080,991	987,133,417
% of standard return...	84.42	70.51	93.42	108.85
1916—Rev. ton-miles, thous. ....	7,809,817	45,017,216	112,846,134	340,689,980
1923—Rev. ton-miles, thous. ....	8,754,273	50,255,257	137,142,098	413,479,011
% of 1916 .....	112.09	111.64	121.52	121.37
1924—Rev. ton-miles, thous. ....	8,093,136	46,394,281	136,082,649	388,872,920
% of 1916 .....	103.63	103.06	120.59	114.14
1916—Rev. per ton per mile, cents .....	0.771	0.778	0.843	0.707
1923—Rev. per ton-mile, cents .....	1.070	1.131	1.228	1.116
% of 1916 .....	138.78	145.37	145.67	157.85
1924—Rev. per ton-mile, cents .....	1.064	1.137	1.209	1.116
% of 1916 .....	138.00	146.14	143.41	157.85

12 per cent in the northwestern region, 22 per cent in the western district and with 21 per cent in the whole United States. The St. Paul's increase in traffic in 1924 over 1916 was 4 per cent, comparing with 3 per cent in the northwestern region, 21 per cent in the western district and 14 per cent in the United States. There are those who contend that loss of traffic is not one of the St. Paul's difficulties but that low rates are the only cause of its troubles. The St. Paul may not have lost traffic but it certainly has not had the increase in traffic

Great Northern lumber traffic that should not escape notice. The Great Northern and the Northern Pacific each have a half interest in the Spokane, Portland & Seattle, which in turn owns all the capital stock of the Oregon Trunk. These lines reach virgin lumber country in the state of Oregon. It is to be supposed that as the lumbering industry continues the tendency will be to turn to this area for supply. In that case, the Great Northern will be given its share of the traffic from the new lumber districts and will be measurably assisted by the fact that its lines reach a widespread territory in the eastern part of the northwestern region where the road's branch line development is greatest in extent, and traffic to which region cannot be affected by Panama Canal competition.

### 1924 Compared with 1923

In 1924, the Great Northern moved, as above noted, 23 per cent less iron ore than in 1923. Its total revenue tons were 12.96 per cent less than in 1924 but otherwise were the largest in the company's history. In the case of revenue ton-miles, the 1924 total showed a decrease of 7.55 per cent from 1923, but besides being less than that year they were less also than in 1917, 1918 and 1920. The total operating revenues were \$110,243,104 as compared with \$120,077,771 in 1923, a decrease of 8.2 per cent. Total operating expenses were \$75,212,058, comparing with \$86,750,523 in 1923, which was a decrease of 13.3 per cent. The chief significance of this marked decrease in operating expenses was the fact that the operating ratio of 68.2 was the smallest reported for any year since 1917.

The net operating revenues, that is, revenues less expenses, totaled \$35,031,046, which was an increase of \$1,703,797. Unfortunately this increase was not carried down to net railway operating income. This resulted because there was an increase of \$1,144,515 in taxes and because a credit equipment rent balance of \$806,631 in 1923 was changed to a net debit balance of \$304,269, in 1924, the difference being \$1,110,900. It is something new for the Great Northern to report a debit per diem balance. The result came about apparently from reductions in the amount of equipment which the Northern now owns but probably the most important factor was the easing in the car situation which permitted the company to keep its own cars on its own rails instead of having them in the East where they would, to be sure, yield a dollar a day but where, at the same time, they would not

TABLE II—GREAT NORTHERN OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1924

Year ended June 30	Mileage	Revenue tons	Revenue ton miles	Average haul	Revenue per ton mile cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1914 .....	7,781	30,857,598	6,930,296,000	225	0.795	663	22.44	\$76,854,937	\$47,769,774	\$29,085,164	62.16	\$20,453,551
1915 .....	8,061	23,453,059	5,773,780,000	246	0.817	650	21.58	67,162,858	36,828,275	30,334,583	54.83	20,618,270
1916 .....	8,053	28,927,130	7,809,817,000	270	0.771	663	22.87	81,262,478	43,914,076	\$37,348,402	54.04	27,600,614
Year ended Dec. 31												
1916 .....	8,098	30,389,386	8,018,210,000	264	0.761	661	22.65	83,181,729	48,569,202	34,612,528	58.39	.....
1917 .....	8,233	30,650,814	8,399,349,000	274	0.766	671	23.72	88,598,735	59,282,156	29,316,578	66.91	23,040,172
1918 .....	8,260	30,948,659	8,844,787,000	286	0.870	684	25.89	100,698,520	84,429,245	16,269,275	83.84	20,063,270
1919 .....	8,220	27,390,432	7,973,569,000	291	0.970	663	24.66	106,562,145	86,786,273	19,775,871	81.44	22,139,586
1920 .....	8,174	32,948,292	8,518,841,000	259	1.054	684	25.34	122,597,865	113,947,115	8,650,751	92.94	19,304,097
1921 .....	8,163	19,533,134	5,740,921,000	294	1.301	607	23.31	101,317,204	80,496,912	20,820,291	79.45	28,469,926
1922 .....	8,261	27,450,587	6,882,465,000	251	1.134	656	23.96	103,452,937	79,636,038	23,816,899	76.98	10,865,672
1923 .....	8,254	36,385,396	8,754,273,000	241	1.070	712	25.31	120,077,771	86,750,523	33,327,248	71.21	18,067,947
1924 .....	8,251	31,669,750	8,093,136,000	256	1.064	770	24.58	110,243,104	75,212,058	35,031,046	68.2	17,941,600

that it should have had. This means simply that lack of traffic must be properly conceded to be one of the St. Paul's handicaps, because when all is said and done an increase of 14 per cent in traffic in 7½ years as was shown for 1923—or an average increase of less than 2 per cent a year—can hardly be considered any increase in traffic at all.

There is a further factor of interest with reference to

be available for Great Northern traffic. President Budd in his annual report further explains that it was necessary for the Great Northern "to pay rental for a large number of foreign cars which it accumulated and used in moving the heavy grain crops."

Net railway operating income of \$24,201,287 compared with \$24,731,992 in 1923, which was a decrease of \$530,705. The decrease in operating expenses was made up

as follows: Maintenance of way expenses decreased \$1,366,774 or 9 per cent; transportation expenses decreased \$6,081,455 or 13.5 per cent; maintenance of equipment expenses decreased \$4,621,336 or 21.3 per cent. This factor of the marked decrease in maintenance of equipment expenses for 1924 as compared with 1923 has been commented on several times in these reviews of the operations of the various railroads. The decrease in the case of the Great Northern was somewhat larger than for most railroads. It was occasioned by the fact that the charges for equipment repairs in 1923 were high due to the shop strike and the equipment rehabilitation program that many roads carried out. Thus, the Great Northern showed for 1924 a decrease in the primary account of repairs to locomotives of \$1,627,721 or 20.4 per cent. There was a decrease of \$1,209,143 or 16.4 per cent in freight car repairs, and similarly a decrease of \$1,304,872 in the primary account of freight train car retirements. In fact, in 1924 there was a credit balance in this account. The Great Northern in 1924 expended for new equipment purchased, for equipment built in company shops and for improvements to equipment, \$8,517,893. So great were the retirements, however, that there was charged off for this purpose \$10,671,354 resulting in a net credit to the investment in equipment account of \$2,153,460.

In a period of five years, the Great Northern has shown no substantial change in the number of locomotives owned but it has had a substantial increase in the total tractive force. The number of freight cars owned at the end of the year was about 6,000 less than at the end of 1923 and less even than on June 30, 1914. The total carrying capacity in tons of these cars was less than at the end of 1923 but, as would be expected, it showed a marked increase over the total for preceding years. With further reference to the Great Northern's equipment situation, the road reported for the month of May, 1925, 9.7 per cent of its cars unserviceable. In May also 22.3 per cent of its locomotives were unserviceable, but it had stored in serviceable condition, 131 or about one-fifth of the total.

#### Transportation Expenses Reduced

Another feature of interest is the reduction of 13.5 per cent in transportation expenses. The ratio of transportation expenses to total operating revenues in 1923 was 37.6 per cent, but in 1924 this was reduced to 35.4 per cent. Over one-half of the total decrease in transportation expenses was accounted for by fuel, the charges for fuel for train locomotives in 1924 being 26.2 per cent less than in 1923. This was the result of lower fuel prices and also marked savings in fuel consumption. In 1924, the Great Northern fuel consumption was 140 lb. of coal per 1,000 gross ton-miles as compared with 150 in 1923. It is further of interest that in 1924 the Great Northern reported the largest average revenue train load in its history, the figure of 770 comparing with the best previous figure of 712 in 1923. It is only seldom that a railroad succeeds in reporting such a marked increase in its average train loading with a reduction of nearly 8 per cent in its revenue ton-miles.

The Great Northern is starting 1925 somewhat better than it started out in 1924. Gross earnings for the first six months were \$46,840,306 as compared with \$45,677,659 for the first six months of 1924. The six-months report shows substantial reductions in operating expenses and a marked improvement in the per diem situation. Although thus far in 1925 the road is still reporting a debit equipment rent balance, this balance is less than one-half that in the first six months of 1924. Net railway operating income to June 30, 1925 was \$6,844,566 compared with \$5,810,101 for the first six months of 1924.

## Steel Dump Car Embodies New Features

A NEW line of air operated dump cars with capacities ranging from 12 to 45 cu. yd. has been placed on the market by the Koppel Industrial Car & Equipment Company, which is owned and operated as a subsidiary of the Pressed Steel Car Company, Pittsburgh, Pa. These cars are of a type in which the entire body tilts on a row of body hinges mounted on the center sill, a distinctive feature being that the hinges are of a three-point type. Normally the body rests at a center point but during the dumping movement the turning point is shifted further out. This arrangement throws the discharge edge of the body out considerably further from the rail than would be the case with a single point hinge without increasing the height of the car. The construc-

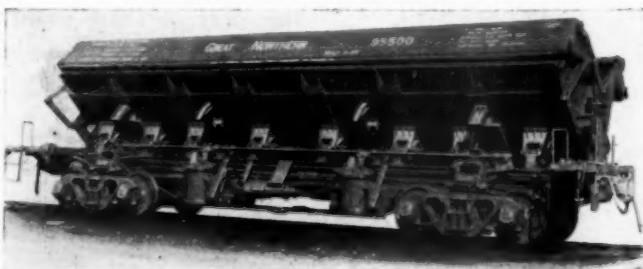


The Car Is Said to Be Entirely Self Clearing

tion of the car permits dumping at an angle that is said to make it entirely self-clearing.

The dumping is actuated by means of vertical cylinders on each side of the center sill. Single cylinders are provided on each side on all cars of capacities ranging from 12 to 25 cu. yd. and twin cylinders on each side of cars having capacities ranging from 30 to 45 cu. yd. The design of the car is such that the operation is entirely automatic.

A new locking mechanism of the compression type is used which supports the body at four points over the bolsters by compression members which are automatically removed when the dumping operation takes place. When



A View of the Car, Showing the Operating Equipment

dumped at an angle of 45 deg. the car body is arrested by contact with friction brake bumpers mounted on the ends of the underframe bolsters. These bumpers reduce the shock on the trucks and underframe. The mechanism for lifting the sides or doors of the car is of a new design. The normal opening required is about six feet but practically any reasonable door or discharge opening can be obtained. It is said that these cars will dump their load at a distance from the rail which makes the use of aprons or floor extensions unnecessary, although the cars can be equipped with doors that drop down to serve as aprons, if desired.



# Largest Railway Telegraph Office Opened at Topeka

*Communication facilities in new office building permit  
efficient handling of business*

THE Santa Fe has recently placed in service a new general telegraph office at Topeka, Kan., which is said to be the largest railway telegraph office in the United States. The office proper occupies 3,800 sq. ft. of floor space on the third floor of the modern 10-story general office building. In addition a connecting locker room 32 ft. by 18 ft. is provided for the employees of the telegraph office. The operating room has natural light on three sides, and electric lighting of special design is provided for the accommodation of the night force. The



A General View of the Operating Room

floor is covered with battleship linoleum and the ceiling is of special design, being constructed of a sound-absorbing composition which eliminates any rebound from the ceiling and materially reduces the noise usually found in a large office of this kind.

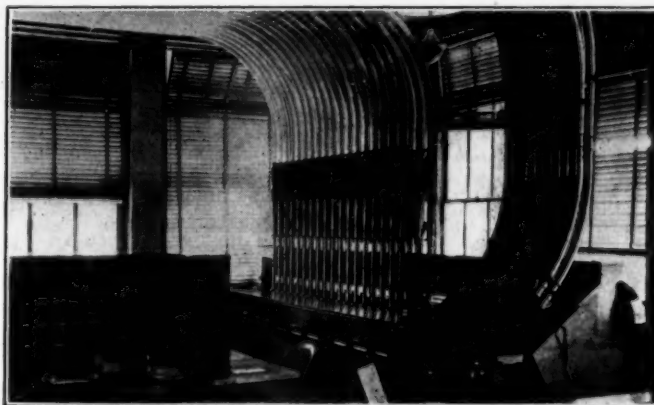
Standard Western Union office equipment is used throughout, including a 10-unit double sided steel distributing frame, a two-section switchboard equipped with various circuits, meters and test sets, two repeater tables for duplex, quadruplex and single Morse repeaters, and seven 10-position steel underframe operating tables.

A special time circuit is provided for repeating time signals over the various circuits on the system. These time signals are normally received on one of the telegraph company's circuits and repeated from the Topeka office to all points on the Santa Fe. Provision is made to obtain time signals from the master clock in the watch inspector's office at Topeka in the event of an interruption in the telegraphs company's circuit. This is accomplished by transferring a plug from the regular to the emergency jack on the switchboard.

The duplex sets are standard type differential while the single line repeaters are the front contact, shunt locking type, wired for use either as half or full sets. Special wound bridge type quadruplex sets are installed as they are in general use over the system. The mounting of apparatus is such as to facilitate adjustment and maintenance, those parts requiring adjustment being easily accessible. A spark quenching arrangement in connection with pole changer tungsten contacts permits the points

being worked exceptionally close with a corresponding increase in the efficiency of both the first and second sides of the quadruplex sets. No difficulty is experienced in operating the second sides successfully through repeaters to single line circuits and semi-automatic sending keys are used on the second side with the same freedom as on the polars. When a section of an overload circuit is interrupted the wire chiefs in the section involved frequently place a common side in the circuit to make it good until the regular channel is restored and in this connection it is seldom that the terminal offices are able to detect the change.

On account of the large number of forms handled in railway work it was felt that the standard width of 42 in. for operating tables was insufficient and special wood tops were, therefore, constructed in the company's shops at Topeka of 1¼ in. oak, 48 in. in width. Both sending and receiving sounders on the operating tables are placed in standard adjustable arm resonators. Racks of special design are mounted under the center runner of the tables for the accommodation of blank forms. Each sending position is equipped with a message retainer in which



Central Control Desk for the Pneumatic Tube System

"sent" telegrams are deposited prior to being picked up and taken to the inspector's desk, and each receiving position is fitted with a goose neck message clip stand for "received" business.

## Lengthy Division Reports

### Handled Without Confusion

The reports of train movement, car situation and other similar large reports collected from each division were formerly picked up by the operating force in general along with routine business. This necessitated carrying the forms from table to table and resulted in more or less confusion and delay for the reason that one man might be using the report in question at the time another desired to use it on the circuit he was working. Under the new arrangement these reports are copied by one man on a schedule. Prior to the time the collection of the reports is commenced the wire chief loops the required circuits.

to the receiving position and the operator working this position cuts in on them in the sequence in which the offices represented appear on his schedule. This facility has eliminated all confusion heretofore experienced in connection with the handling of the reports in question and reduced the time required to handle them.

The distribution desk near the center of the operating room is of steel with a linoleum covered top constructed in the shape of the letter "U." All office distribution is made from this center, which is connected to the central tube station with a send and receive tube. A revolving route chart, and an electric time stamp are mounted on the desk. Adequate shelving is provided on the inside for the accommodation of empty carriers, etc.

#### Tube System Serves General Office Building

The pneumatic tube system is the latest design suction type of plant and serves the entire general office building. The central desk is equipped with an endless belt arrangement by which the received carriers are carried to the operating position, thus enabling the operator to handle both the incoming and outgoing carriers from one position.

The traingram, inspection, manifold and hold-over desks are of special steel construction with linoleum tops, and



The Main Switchboard, Two Repeater Tables and the Telegraph Tape Recorder

on the desks steel pigeon-hole cases designed for the particular work involved are mounted. A large number of telegrams are telephoned to and received by telephone from the heads of various departments at night and on holidays and a sound-proof telephone room has been provided to facilitate the handling of this branch of the service.

#### Other Equipment

The stationery and record cases are of steel, 6 ft. high by 4 ft. wide by 24 in. deep, equipped with double doors. A specially constructed steel repair desk has been provided for the wire chief, also a steel case for the accommodation of spare instruments. All steel work is painted olive drab, which color harmonizes nicely with the battle-ship linoleum covering the floor. The table tops and wood desks are golden oak finish.

Instead of being mounted on the switchboard shelf in the usual manner, the bridge testing set is mounted on a wheeled stand so that it may be easily transported to any desired location in the office. The wire chiefs are required to go over all equipment once a year, measure up the resistance of all resistances, windings, etc., and the portable bridge eliminates the necessity for removing instruments from their fixed location for this purpose.

In addition to the other equipment a 20-circuit tele-

graph tape recorder, occupying a position adjacent to the manager's desk, has been installed. All signals on each of the 20 circuits are recorded in "dots and dashes" on a two-inch tape, providing a graphic record of the entire operation of the circuit. While the record has been used quite extensively by broker offices for some years the Santa Fe is, so far as known, a pioneer in its use in the railroad field. While the recorder has been in service but a short time it has fully demonstrated its value as an adjunct to the telegraph service. The tape is automatically stamped by an electric time stamp each minute and this time record greatly facilitates looking up information on the tape. The normal 24-hour load is around 18,000 quoted numbers.

#### Wire Distribution Designed for Future Expansion

The distribution of office wire and cable from the distributing frame to the various tables is made through runs of conduit embedded in the floor. In anticipation of a printer installation and future growth, conduit runs have been extended to the present unoccupied floor space in the northwest corner of the office. Conduit runs have also been extended into the locker room and superintendent of telegraph's quarters adjoining the telegraph office, so that if the demand should ever arise, the tile partitioning wall may be removed and the present office enlarged approximately 100 per cent. All runs unused at this time are terminated at the floor level with screw plug. One 150-conductor lead sheath underground cable carries the line wires into the office. A total of 28,000 ft. of office wire and 1,145 ft. of office cable containing 24,000 ft. of conductors was used in wiring up the office.

#### "Cutover" Instantaneous

The "cutover" from the old office to the new was unique in that it was made instantaneously. This was made possible by reason of the new office being fully equipped with practically all new material on account of a change in locals from 26-volt operation in the old to 110-volt operation in the new office. To effect the cutover a bank of 50 double contact relays was mounted on the distributing frame, fuses were removed from the fuse blacks in both offices and in the old office the back contact relay terminals were connected across the fuse terminals as that the circuits in that office were held closed so long as the armatures remained in the open position. In the new office the front relay contact terminals were bridged across the fuse terminals. The coils of the relays were connected in series and all controlled by a single key, which when closed, automatically disconnected the old and connected the new office to the line, the cable to the new office having been "half tapped" to the one serving the old. Just prior to the hour set for the move a portion of the operating force was moved to the new quarters and seated at positions serving circuits being manned at that time in old quarters. F. C. Fox, general manager of the eastern lines, with headquarters at Topeka, who began his railroad career as an operator, depressed the master key at 8:34 p. m., January 24, and the move was over. All adjustments, balances, etc., had been carefully checked with the result that there was no hitch in the cutover, work being taken up in the new office immediately upon the closing of the master key.

The Topeka office is in charge of J. W. Hudson, manager, and was designed by C. O. Overbey, system telegraph engineer, and installed under the supervision of J. W. Cook, system equipment engineer. H. C. Chace, superintendent of telegraph, with jurisdiction over communication facilities on the Santa Fe system, directed the installation, having general charge of all engineering and construction features.



## Division VI Committees

**A**N early start has been given to the year's work of Division VI, Purchases and Stores, of the American Railway Association, by the completion of the membership list of all committees. These committees and their personnel follow:

**General Committee:** C. D. Young (chairman), stores manager, Penna.; D. C. Curtis (vice-chairman), chief purchasing officer, C. M. & St. P.; W. Davidson, general storekeeper, I. C.; W. S. Galloway, purchasing agent, B. & O.; U. K. Hall, general supervisor of stores, U. P.; W. A. Hopkins, general purchasing agent, M. P.; C. C. Kyle, general storekeeper, N. P.; H. H. Laughton, assistant to vice-president (operation), Southern; L. Lavoie, general purchasing agent, C. N. R.; A. S. McKelligon, general storekeeper, S. P.; J. F. Marshall, purchasing agent, C. & A.; A. W. Munster, purchasing agent, B. & M.; G. E. Scott, purchasing agent, M-K-T.; J. G. Stuart, general storekeeper, C. B. & Q.; C. B. Tobey, general storekeeper, L. V.; and C. E. Walsh, asst. pur. agt., Penna.

**Stores Department Book of Rules:** L. T. Hoffman (chairman), traveling storekeeper, U. P.; V. N. Dawson, district storekeeper, B. & O.; J. H. Ellis, storekeeper, C. B. & Q.; B. C. Hart, division storekeeper, N. Y. N. H. & H.; E. Harty, assistant general storekeeper, S. P.; J. C. Jackson, general storekeeper, G. T. in U. S.; T. H. Ryan, assistant purchasing agent, Wabash; E. J. Lamneck, assistant to purchasing agent, Penna.; J. S. Genthner, g. s., k., L. & N. E.; C. W. Yeamans, pur. agt., C. & W. I., and W. A. Hopkins, gen. pur. agt., M. P.

**Classification of Material:** E. H. Hughes (chairman), general storekeeper, K. C. S.; L. J. Ahlring, general storekeeper, C. & E. I.; Hal D. Foster, storekeeper, C. B. & Q.; W. M. Hinkey, supervisor of materials, B. & O.; J. U. King, assistant general storekeeper, A. C. L.; D. H. Phebus, chief clerk to general storekeeper, C. M. & St. P.; W. M. Portlock, general storekeeper, S. A. L., and J. F. Marshall, purchasing agent, C. & A.

**Recovery, Repair and Reclamation of Discarded Material—Classification, Handling and Sale of Scrap:** C. J. Mackie (chairman), storekeeper, C. B. & Q.; B. T. Adams, division storekeeper, I. C.; G. W. Alexander, general storekeeper, C. of Ga.; E. J. Becker, general inspector of stores, S. P.; I. C. Bon, superintendent of reclamation, Wabash; W. J. Diehl, purchasing agent, M. & O.; C. H. Hoinville, assistant to general purchasing agent, A. T. & S. F.; C. H. Lammers, chief material inspector, C. & E. I.; G. W. Lieber, superintendent of reclamation, M-K-T.; W. H. Morris, assistant general storekeeper, Reading; E. W. Peterson, general storekeeper, B. & A.; A. L. Prentice, supervisor scrap and reclamation, N. Y. C.; E. J. Remensnyder, asst. to pur. agt., Penna., and C. B. Tobey, g. s. k., L. V.

**Provisions for Uniform Observance of General Balance Sheet Account 716—Materials and Supplies, and Recommendations Governing Charges to Material Stores Expenses, Paragraph 16—Special Instructions on Operating Expenses:** A. L. Sorenson (chairman), manager of stores, Erie; O. A. Donegan, general stores accountant, B. & M.; C. C. Dibble, general supervisor stores, N. Y. C.; A. A. Goodchild, general storekeeper, C. P.; L. P. Krampf, supply agent, M. P.; O. B. Mills, assistant general storekeeper, Penna.; J. C. McCaughan, general storekeeper, H. V.; C. H. Murrin, special accountant, I. C.; J. L. Sullivan, general traveling storekeeper, U. P.; and H. H. Laughton, assistant to vice-president (operation), Southern.

**Forest Products:** H. Condon (chairman), assistant forester, Penna.; A. T. Babcock, tie and timber agent, W. M.; M. E. Bolinger, lumber agent, N. & W.; R. A. Bury, general tie agent, N. Y. C.; H. O. Bush, general lumber and tie inspector, Erie; T. H. Clarke, tie and timber agent, Southern; S. M. Elder, lumber agent, B. & O.; D. R. Elmore, assistant to general manager, Fruit Growers' Express Co.; W. A. Knight, assistant lumber and tie agent, I. C.; G. H. Robinson, purchasing agent, O. W. R. R. & N. Co.; O. A. Schultz, chief lumber inspector, C. B. & Q.; F. V. Weisenburger, timber agent, N. P., and L. Lavoie, general purchasing agent, C. N.

**Stores Department Buildings and Facilities for Handling Materials:** E. H. Polk (chairman), district storekeeper, S. P.; O. T. Burleigh, traveling storekeeper, B. R. & P.; N. C. Gallaher, assistant general storekeeper, M-K-T.; E. D. Hagerty, chief general material supervisor, Penna.; T. J. Hegeman, traveling storekeeper, C. B. & Q.; W. S. Morehead, assistant general storekeeper, I. C.; J. F. Rex, division storekeeper, U. P.; R. J. Stackhouse, general storekeeper, Reading; E. A. Workman, district storekeeper, B. & O., and A. W. Munster, purchasing agent, B. & M.

**Workable Rules in Connection with the Carrying out of the Provisions of Section 10 of the Clayton Anti-Trust Act:** E. A. Clifford, (chairman), assistant general purchasing agent, A. T. & S. F.; W. G. Phelps, assistant purchasing agent, Penna.; S. B. Wight, assistant to president, N. Y. C., and H. C. Pearce, director of purchases and stores, C. & O.

**Supply Train Operation and Line Delivery of Materials:** C. L. Wright, (chairman), general storekeeper, M-K-T.; A. W. Blume, general storekeeper, St. L.-S. F.; A. C. Johnson, division storekeeper, N. P.; E. H. Lyons, division storekeeper, C. M. & St. P.; C. H. McGill, supply train storekeeper, N. Y. N. H. & H.; J. E. Mahaney, superintendent stores, C. & O.; F. J. Talbot, superintendent stores, Erie; C. R. Yoder, assistant general storekeeper, N. Y. C.; J. W. Zimmerman, division storekeeper, Wabash, and A. S. McKelligon, general storekeeper, S. P.

**Joint Committee on Fuel Conservation, Division VI—Representatives:** S. Porcher (vice-chairman), general purchasing agent, Penna.; R. C. Vaughan, vice-president, C. N. R.; S. B. Wight, assistant to president, N. Y. C.; G. E. Scott, purchasing agent, M-K-T.; H. B. Grimshaw, S. A. L.; L. N. Hopkins, gen. pur. agt., C. B. & Q.; and Thomas Britt, gen. fuel agt., C. P.

**Materials Purchase Budget:** U. K. Hall (chairman), general supervisor of stores, U. P.; M. J. Collins, general purchasing agent, A. T. & S. F.; D. C. Curtis, chief purchasing officer, C. M. & St. P.; R. J. Elliott, purchasing agent, N. P.; R. C. Harris, general storekeeper, Penna.; A. W. Munster, purchasing agent, B. & M., and M. J. Wise, officer on staff of president, S. P.

**Unit Piling and Numbering of Material:** J. W. Wade (chairman), general storekeeper, N. & W.; O. V. Daniels, assistant general storekeeper, Penna.; V. E. Johnson, traveling storekeeper, D. L. & W.; F. J. McGuinness, division storekeeper, D. & H.; W. A. Miller, division storekeeper, Southern; E. G. Roberts, division storekeeper, C. R. I. & P.; F. C. Warren, g. s. k., St. L. S. W., and D. C. Curtis, chief pur. off., C. M. & St. P.

**Purchasing Agent's Office Records and Office Organization:** P. L. Grammer (chairman), assistant to purchasing agent, Penna.; J. J. Bennett, purchasing agent, I. C.; J. W. Corbett, purchasing agent, C. N. R.; D. V. Fraser, assistant purchasing agent, M-K-T.; L. V. Guild, purchasing agent, O. S. L.; Henry Hansen, assistant purchasing agent, N. P.; E. F. Hasbrook, assistant purchasing agent, C. B. & Q.; W. H. King, Jr., assistant to vice-president, S. A. L.; B. B. Melgaard, chief clerk, purchasing department, C. M. & St. P.; H. M. Rainie, chief price clerk, purchasing department, B. & M.; B. T. Wood, vice-president and chief purchasing officer, St. L.-S. F., and W. S. Galloway, purchasing agent, B. & O.

**Stationery and Printing:** James Deery, (chairman), assistant to purchasing agent, Penna.; J. L. Bennett, purchasing agent, C. of Ga.; W. A. Clem, assistant to purchasing agent, Reading; Clyde Cocke, purchasing agent, N. & W.; Dan Delaney, stationer, C. & A.; W. W. Fulmer, general purchasing agent, American Railway Express Co.; W. W. Griswold, stationer, C. R. I. & P.; E. E. Herold, stationer, B. & O.; V. R. Plank, stationery storekeeper, S. P.; J. T. Van Horn, stationer, M. P.; J. L. Woods, purchasing agent, N. C. & St. L., and C. E. Walsh, assistant purchasing agent, Penna.

**General Accounting:** H. H. Laughton, (chairman), v. p., Southern; H. C. Pearce, director of pur. and stores, C. & O., and E. W. Thornley, asst. pur. agt., B. & O.

**Store Delivery of Material to Users at Shops:** H. C. Stevens (chairman), general storekeeper, Wabash; R. M. Blackburn, general storekeeper, C. & N. W.; H. R. Duncan, inspector of stores, C. B. & Q.; J. S. Gabriel, division storekeeper, D. & R. G. W.; G. H. Greer, assistant to purchasing agent, M. & O.; W. F. Jones, general storekeeper, N. Y. C.; C. W. Kinnear, assistant general storekeeper, Penna.; G. P. Turner, division storekeeper, Southern; W. J. Sidey, traveling storekeeper, L. V., and J. G. Stuart, general storekeeper, C. B. & Q.

**Standardization and Simplification of Store Stock and Disposition of Material Reaching Obsolescence:** A. G. Follette, (chairman) assistant chief general material supervisor, Penna.; W. L. Hunker, district storekeeper, C. R. I. & P.; L. V. Hyatt, assistant to supply agent, M. P.; J. T. Kelly, general storekeeper, C. M. & St. P.; J. P. Kavanagh, general storekeeper, C. & O.; A. N. Laret, assistant to vice-president and chief purchasing officer, St. L.-S. F.; F. J. McMahon, assistant general storekeeper, N. Y. C.; E. H. Price, general storekeeper, N. Y. N. H. & H.; E. D. Toye, general storekeeper, C. N. R., and C. C. Kyle, general storekeeper, N. P.

**Control of Line Stocks:** L. C. Thomson (chairman), manager of stores, C. N. R.; Howard Hayes, general storekeeper, G. N.; J. C. Kirk, assistant general storekeeper, C. R. I. & P.; J. L. Layton, general material supervisor, Penna.; Frank McGrath, traveling storekeeper, B. & M.; J. E. Peery, traveling storekeeper, S. P.; E. A. Porter, district storekeeper, M. P.; G. A. Secor, general storekeeper, C. & A.; J. H. Sweeney, superintendent stores, Erie, and W. Davidson, general storekeeper, I. C.

**Uniform Methods Pertaining to Purchases of Equipment and Large Material Contracts, and Vital Statistics Relating Thereto:** G. W. Bichlmeir (chairman), general purchasing agent, U. P.; W. C. Bower, manager purchases and stores, N. Y. C.; C. B. Hall, assistant to general purchasing agent, Penna.; A. A. Taylor, assistant to general purchasing agent, M. P.; G. H. Walder, purchasing agent, C. M. & St. P.; E. W. Walther, assistant purchasing agent, B. & O., and G. E. Scott, purchasing agent, M-K-T.

## General News Department

The night air mail from New York to Chicago, which completed its first month on July 31, reports having carried 6,500 lb. of mail. Eastbound, the total was about 7,000 lb.; and all trips in both directions were made without serious mishap.

Ninety employees of the Pennsylvania Railroad System were retired from active duty on August 1, under the company's pension plan, and placed upon the "Roll of Honor." Seven of those have been in the employ of the road for 50 years or more each, while 55 have had records of 40 years' service or more. Since the establishment of the Pennsylvania's pension plan, on January 1, 1900, a total of 18,374 employees have been retired under its provisions; of whom 8,262 are still living.

The Brotherhood of Locomotive Engineers, represented by J. McGuire, chairman of the brotherhood on the Chicago & North Western, has entered a formal protest with the Illinois Commerce Commission against the issuance of a permit for the operation of a competitive bus line over the state highway between Dixon, Ill., and Sterling. This is believed to be the first instance of a brotherhood officially taking such action. The protest is made on the grounds that the bus line would divert a certain amount of passenger business from the North Western and would tend to lessen the number of employees required to provide passenger service on the railway.

### C. N. R. President Hopeful of Future

Commenting upon the financial statement of the Canadian National for the six months period, January 1 to June 30 inclusive, issued this week, Sir Henry W. Thornton, chairman and president of the company, said in Jasper, Alta., on August 3, that an analysis of the improvement in the cumulative position of the net earnings for the first six months of this year indicated that the result has been obtained through a substantial saving in operating costs. Gross receipts show a decrease of \$9,318,815, or 8.11 per cent, compared with the same period of last year, but the net revenue is \$1,129,916 ahead of the same period.

To bring about this result all forms of operating expenses have been substantially reduced, conduction of transportation expenses showing a reduction of over five million dollars, or 9.12 per cent. This reduction in transportation expenses being in greater ratio than the decline in operating revenues indicates that the measures taken to increase operating efficiency are producing encouraging results and in bringing about these results the property of the company has been maintained to a satisfactory standard commensurate with the traffic handled. The increase in gross receipts shown during the weekly periods of July might be accepted as indicative that conditions have now shown a turn for the better.

### Northern Pacific Hospitals

"Railroad Hospitals on Ten Roads," a brief article in the *Railway Age*, July 11, containing notes concerning the hospital establishments of prominent western railroads, was deficient, in that the compiler omitted the Northern Pacific; and an officer of the Northern Pacific has written to call attention to the omission.

The Northern Pacific Beneficial Association has finished its 43rd year of beneficent service to the employees of that road, and it now maintains large and well-equipped hospitals at St. Paul, Minn., Glendive, Mont., Missoula, Mont., and Tacoma, Wash. The last annual report shows the total number of hospital cases treated in 1924 as 20,613 or 1,808 more in the preceding year. In addition to the hospital cases there were "line cases"—meaning "outdoor" treatment—numbering 48,961. The hospitals are supported by assessments on each employee monthly, and total receipts in 1924 were \$581,696. This state-

ment covers apparently the whole of the operations of the Beneficial Association, the actual cost of operation of the four hospitals being \$354,973. "Line operation" cost \$132,898. The assessments in 1924 against employees earning less than \$100 a month were one per cent plus a special assessment of ten cents, with a minimum of 85 cents a month; employees earning over \$100, one per cent, plus 25 cents, with a maximum of \$1.75. The railway company makes a contribution each year, and the surplus at the end of 1924 was \$56,793.

The board of managers consists of 10 men elected by 10 different classes or sections of employees, five men elected by districts, and nine officers of the railway company, the highest of these being the operating vice-president, who is vice-president of the board of managers. The president of the board of managers, H. B. Smith, apparently devotes his whole time to the Beneficial Association. This officer, and the secretary, are the only two who are mentioned in the by-laws as receiving salaries.

### Earnings for the First Six Months

Class I railroads having a total mileage of 236,594 miles had, during the first six months this year, gross operating revenues amounting to \$2,895,220,250, an increase of \$22,838,589 or nearly one per cent over the same period last year, according to reports filed by the carriers with the Interstate Commerce Commission and tabulated and made public by the Bureau of Railway Economics.

Operating expenses for the six months period totaled \$2,238,847,700, a reduction of \$35,436,440 or 1.6 per cent under those for the corresponding period last year although freight traffic during the first half of 1925 was approximately 2.5 per cent above the same period in 1924.

The net railway operating income of the Class I carriers for the first six months was \$437,668,257, which was at the annual rate of return of 4.46 per cent on property investment, compared with \$392,355,622 or 4.12 per cent during the first six months in 1924, or an increase of \$45,312,635.

For the month of June alone, the net railway operating income of the Class I carriers totaled \$91,716,862 compared with \$65,806,740 for the same month last year. Gross operating revenues for the month amounted to \$506,812,500, an increase of nearly nine per cent over June last year while operating expenses totaled \$375,914,475, an increase of 3.2 per cent.

Earnings by districts for the first six months this year with the percentage of return based on property investment on an annual basis follows:

	Dollars	Per Cent
New England Region.....	18,049,865	4.43
Great Lakes Region.....	91,401,615	5.47
Central Eastern Region.....	93,995,225	4.58
Poconos Region.....	29,262,174	6.70
Total Eastern District.....	232,708,879	5.10
Southern District.....	75,124,038	5.55
Northwestern Region.....	30,659,676	2.48
Central Western Region.....	61,896,638	3.42
Southwestern Region.....	37,279,026	4.38
Total Western District.....	129,835,340	3.33
UNITED STATES.....	437,668,257	4.46

Twenty-three Class I railroads operated at a loss during the first half of 1925, of which eight were in the Eastern, two in the Southern and thirteen in the Western districts. The operating ratio was 77.33 as compared to 79.18 for the first six months of 1924.

Expenditures for maintenance made by the Class I carriers during the six months period this year totaled \$1,018,069,850, a decrease of nearly \$7,000,000 or nearly one per cent under the same period in 1924. Maintenance of way expenses amounted to \$388,299,794, an increase of \$5,570,000 or 1.5 per cent compared with the first half of last year. Expenses for maintenance of equipment totaled \$629,770,057, a decrease of \$12,518,000 or 1.9 per cent.

Carriers in the Eastern district, during the first six months this



year, had a net operating income of \$232,708,879 compared with \$202,159,652 during the corresponding period last year. Freight traffic in the Eastern district during the first six months, according to incomplete reports, was more than two per cent above the corresponding period last year. Gross operating revenues of the Eastern carriers totaled \$1,458,908,000, an increase of one per cent over the first half of 1924. Operating expenses totaled \$1,236,606,950, a decrease of 1.7 per cent under the same period last year. Class I carriers in the Eastern district during the month of June alone had a net operating income of \$49,769,796 compared with \$34,200,829 during the same month last year.

Class I carriers in the Southern district during the first six months this year had a net operating income of \$75,124,038 compared with \$68,215,085 during the first half of 1924. Freight traffic on the Southern roads during the first six months this year was nearly six per cent above the same period last year. Gross operating revenues of the Southern carriers for the six months period this year totaled \$405,204,984, an increase of 2.8 per cent over the same period last year while operating expenses totaled \$300,882,838, or practically the same as those for the same period last year. The net operating income for the Class I railroads in the Southern district for June was \$10,995,791, compared with \$8,087,067 during June last year.

Carriers in the Western district had a net operating income during the six months period this year of \$129,835,300 compared with \$121,980,900 for the same period last year. Freight traffic in the Western district showed an increase of approximately 1.5 per cent over the first half of 1924. Gross operating revenues of the Western carriers totaled \$1,031,107,200, a decrease of one-fifth of one per cent under the same period last year while operating expenses totaled \$814,358,000, a decrease of 1.8 per cent. Class I carriers in the Western district during the month of June alone had a net operating income of \$30,951,275 compared with \$23,518,840 during the same period one year ago.

### English Grand Trunk Investors'

#### Committee to Visit Canada

As London investors in Grand Trunk and Grand Trunk Pacific stock have accepted the invitation of Sir Henry Thornton, president of the Canadian National, to come to Montreal and confer regarding dividend payments, Sir Henry has made public the following letter to Alfred Bernard, secretary of the Grand Trunk Pacific debenture holders' committee in London:

"As you are aware, the liability of the Grand Trunk Railway Company (now a part of the Canadian National Railways System), with respect to certain debenture stock issued by the Grand Trunk Pacific Railway Company, under the authority of chapter 100 of the Statutes of Canada, 1906, has been the subject of controversy. The contention and points at issue are so well-known that I need not enter into any detailed discussion of them.

"The legal department of the Canadian National Railways Company has advised me that the position taken by the company heretofore is sound. In order further to assure myself of this, however, the question under discussion was submitted to Messrs. Brown, Montgomery & McMichael, barristers, of Montreal, for an opinion. This opinion is advanced to Messrs. George A. Touche & Company, who are the auditors of the National Railways System.

"I venture to suggest that you examine the opinion of Messrs. Brown, Montgomery & McMichael, and if you are then still unconvinced of the legality of our position I will be glad to have the appropriate officers of this company discuss the matter in Canada with any representatives you may select in the hope that we may convince you of the correctness of our attitude. In the event of further disagreement I suggest that you bring an action in the courts to determine the points at issue. We would be glad to join with you in such a suit and expedite the decision. In any decision handed down the courts will, of course, determine the division of costs as well as the main question.

"It may be that you will regard any discussion as profitless, and will prefer to involve legal proceedings immediately; and possibly this might be the more expeditious method.

"It seems to me that what I have proposed will definitely and finally settle the somewhat protracted controversy. After all, courts are provided for the purpose of settling contentions between parties and I see no reason why we should not avail ourselves of the judiciary in this instance."

## Traffic News

Samuel Herndon has been appointed manager of the traffic department of the Cincinnati (Ohio) Chamber of Commerce.

A handsomely illustrated 50-page booklet entitled, "Chicago for the Tourist," has been published by the Illinois Central. The booklet describes the advantages of Chicago as a vacation resort, its new buildings, its industries, etc.

The Women's Traffic Club of Los Angeles, Cal., held its regular meeting on July 22. Addresses were made by Major Roger Marchetti and Professor George A. Denfield. The railroad women of Los Angeles have made such a success of their club that the establishment of a similar club in San Francisco is now reported as under way.

The formation of a national advisory board to co-ordinate the work of the regional advisory boards and to expedite measures of national scope was recommended by the Northwest Regional Advisory Board at its meeting at Duluth, Minn., on July 21. The proposed national board would consist of elected representatives of each regional board. It was suggested that a joint meeting of the present regional advisory boards be held to bring about the formation of the national body. The next meeting of the Northwest Regional Advisory Board will be held at Grand Forks, N. Dak., on October 20.

### New Santa Fe Cars Make Successful Trial Trip

The Atchison, Topeka & Santa Fe has just purchased from the Pullman Company and placed in service a dining car and a club lounge car which embody a number of revolutionary changes in design. These cars, which are intended to be operated as a unit, have made a trial trip from Chicago to Los Angeles and return in the California Limited. They depart from conventional design primarily in their interior arrangement which has been planned with a particular view to increasing the efficiency of dining car service. These cars are still considered in the experimental stage and their operation is being watched closely. Patents have been granted to Byron S. Harvey of the Harvey System on a number of features of the diner.

### Heavy Passenger Traffic to Florida

The Florida East Coast on August 1 put on a new day express train between Jacksonville, Fla., and Miami, leaving Jacksonville, southbound, at 9:15 a. m. arriving at Miami at 9:15 p. m. and leaving Miami, northbound, at 7:30 a. m., arriving at Jacksonville at 7:45 p. m. In connection with this train, through sleeping cars are run to and from Chicago both on the Seminole Limited of the Illinois Central and the Dixie Flyer of the Chicago & Eastern Illinois; through sleepers also between Asheville, N. C., and Miami, over the Southern Railway and the Atlantic Coast Line, by way of Savannah; also between Atlanta, Ga., and Miami, over the Southern Railway, via Valdosta.

The through cars to and from Chicago, heretofore run regularly in the winter on the Dixie Flyer and Seminole Limited, are now for the first time operated in the summer season. Chicago traffic officers of the roads named report an unusual volume of Florida passenger traffic for this time of the year.

### New Haven to Give Receipts

#### for Commutation Rate Increase

The increased fares for monthly and 50 ride tickets on the New York, New Haven & Hartford between New York City and points in New York State and Connecticut went into effect on August 1, in accordance with the announcement which was noticed in the *Railway Age* last week. C. A. Van Auken, corporation counsel of New Rochelle, N. Y., speaking for New Rochelle and other cities and in behalf of complaining ticket holders, has continued his efforts before the Supreme Court of New York to secure an injunction forbidding the adoption of

the advanced rates; and on August 4, although the question of the injunction had not been decided, he secured an order from Justice A. S. Tompkins requiring the railroad company to give, with each ticket, a certificate promising to make refund in case the action of the Public Service Commission or of the courts should finally hold the new rates excessive. To this condition the railroad company agreed; at the same time protesting that the court at this time has no jurisdiction in this proceeding.

### Shrine Convention Presents

#### Difficult Operating Problem

An operating problem of extraordinary difficulty was encountered by the Southern Pacific, the Atchison, Topeka & Santa Fe and the Los Angeles & Salt Lake in the transportation of delegates to and from the Shrine convention at Los Angeles, Cal., last June. On the Southern Pacific, for example, 18 special trains consisting of 192 cars were run into Los Angeles. In addition, the Southern Pacific brought in nine trains with 107 cars, from the East via San Diego in conjunction with the San Diego & Arizona. At the close of the convention, 33 special trains consisting of 398 cars were run by the Southern Pacific from Los Angeles to San Francisco.

At the River Station freight yard, 41 sleeping cars were parked for occupancy. Approaches to the cars were filled in with crushed rock; water, air and steam pipes were laid, a lighting system was established, and other special facilities were provided for the convenience of the visitors. Five dynamo cars were used to furnish electric current for the lighting and heating of the occupied Pullman cars and to charge the batteries of the unoccupied cars, which were cleaned and stored. In a headquarter's coach at the park telephone booths were provided for the visitors, as were telegraph service and an information bureau.

The handling of baggage at the close of the convention constituted a particularly difficult problem. The bulk of the hand baggage was taken by transfer companies directly to special baggage cars. Each piece of baggage was tagged for its particular car and was distributed from the special central baggage cars to the car in which the passenger owning it had his accommodations. Although 22,897 pieces of unchecked baggage were handled, there were no shortages or irregularities. In addition to the unchecked baggage, there were handled through Los Angeles baggage rooms during the convention week 20,525 pieces of checked baggage, compared with the 10,000 pieces handled in a normal week.

To provide dining car service for the Shriners, 45 special dining car crews were concentrated in Los Angeles during the convention week. On June 4 and 5, regular and extra dining cars to the number of 58 were operated on special trains leaving Los Angeles.



An Uncrated Bear Recently Handled by the Canadian National Express

## Commission and Court News

### Interstate Commerce Commission

#### Western Rate Hearing Postponed

The Interstate Commerce Commission has announced a postponement from September 1 to September 8 of the hearing at Chicago before Chairman Aitchison in the general rate structure investigation, No. 17,000, and the application of the western roads for a rate advance, Ex Parte 87. Twenty-two western states will offer united opposition to the proposal to increase freight rates, expected to be brought forward at this hearing, according to a statement made by O. E. Bradfute, president of the American Farm Bureau Federation, at the annual western regional conference at Fort Collins, Colo., last week.

#### Railway Mail Pay Case Re-Opened

The Interstate Commerce Commission has announced a re-opening of the railway mail pay investigation, No. 9,200, "for re-examination and such further hearing as the commission may direct with respect to the facts and circumstances surrounding the transportation of the mails, and the services connected therewith, by all railway common carriers subject to the said act of July 28, 1916." This action is taken in response to a petition filed by the railways, contending that the present rates for the transportation of the mails are inadequate, and also an answer filed by the postmaster general, who contended that the rates are too high, and asked that the proceeding be reopened for re-examination generally.

#### Ruling on Overcharge Claims

Straight overcharge claims barred by statute were not revived by subsequent amendment of the statute the Interstate Commerce Commission held in a conference ruling July 28, issued in conformity with the decision on June 8 of the U. S. Supreme Court. The text of the ruling is presented herewith:

"Claims barred by statute not revived by subsequent change in statute.—Upon inquiries as to the effect of the decision rendered on June 8, 1925, by the Supreme Court of the United States in *Wm. Danzer & Co., Inc., v. Gulf & Ship Island R.R. Co.*: The commission construes that decision, considered in connection with the decision in *Kans. City So. Ry. v. Wolf*, 261 U. S. 133 (see Conf. Ruling of February 23, 1924) as prohibiting common carriers subject to the interstate commerce act from paying straight overcharge claims which were barred by statute at or prior to the amendment of June 7, 1924, to paragraph (3) of section 16 of said act, and as prohibiting the commission from awarding reparation on any claim which was barred by statute at or prior to the date of that amendment."

#### New Class Rates in South

Some upward revision of class rates in southern territory that possibly may result in slightly larger revenues for the carriers, has been prescribed by the Interstate Commerce Commission in a report by Commissioner Eastman. It is assumed that the new class rate structure will become effective January 1 next or soon thereafter although the commission fixed that date only with respect to a fourth section order in which authority was denied to continue departures from the long-and-short haul provision of the statute. The fourth section order modifies existing authority to bring it into conformity with the new bases of rates established.

The scale of rates prescribed in the final report are higher than that proposed in Commissioner Eastman's tentative report. The rates up to 50 miles and between 300 and 650 miles are the same, but are higher between 50 and 300 miles and between 650 and 1,500 miles, the end of the scale. There has been no traffic test under the scale prescribed and such a check may change the first



offhand impression of the effect that the application of the new rate structure will have.

The significant provisions of the commission's report on its investigation are presented in its syllabus, as follows:

Upon general investigation on the commission's own motion of interstate class rates and less-than-carload commodity rates within southern territory and between southern and official territories, all rail and rail water, and of less-than-carload ratings in exceptions to southern classification; Found:

1. That interstate class rates between points in southern territory should be not higher than a normal level based upon a distance scale or scales of such extent as to cover hauls of all lengths.
2. That maximum reasonable interstate class rates on standard lines between points in southern territory and over routes lying wholly within such territory, except between points in Virginia and points in North Carolina and except to and from points in the Florida peninsula are, and for the future will be, rates determined by the scale shown in Appendix K.
3. That maximum reasonable interstate class rates on standard lines between points in the Florida peninsula south of the line of the Seaboard Air Line from Jacksonville to River Junction, on the one hand, and other points in southern territory, on the other, are, and for the future will be, rates determined by the distance scale shown in Appendix K plus arbitraries determined by the scale shown in Appendix L for that part of the distance lying south of the line of the Seaboard Air Line above referred to.
4. That all carriers operating in southern territory shall be classed as standard lines for the purposes of the foregoing findings except certain short and weak lines which require special rate treatment.
5. That in applying scales of distance rates and arbitraries distances should be computed at actual mileages over the shortest possible route between any two points via existing connections for interchange of carload traffic, embracing as a maximum the lines or parts of lines of not more than three carriers for distances of 200 miles or less, four carriers for distances from 200 to 500 miles, and five carriers for greater distances, except that 50 miles may be used as constructive distance for car-float transfer on the Tennessee River in Alabama between Hobbs Island and Gunters Landing.
6. That reasonable interstate class rates between, from, or to points on specified weak or short lines are, and for the future will be, rates determined by the scale shown in Appendix K plus arbitraries determined by a distance scale similar but not necessarily the same as the scale shown in Appendix L applied to the haul over the short or weak line.
7. That there is no justification for requiring the maintenance or establishment of less-than-carload exceptions to the southern classification.
8. That through class rates lower than the combination of local rates to and from the boundary line, relatively no higher than those found reasonable as a maximum for application within southern territory, should be established between official and southern territories.
9. That joint rail-water-rail class rates between interior points in eastern territory and interior points in southern territory are necessary and desirable in the public interest and should be established, in lieu of the present nonconcurrence rates, between such points in all cases where maximum reasonable rail-water-rail rates are herein prescribed.
10. That maximum reasonable and nonprejudicial interstate class rates between official and southern territories are, and for the future will be, rates governed by southern classification and based upon key rates shown in Appendix O or, in the case of points between which no key rates are shown, based upon the distance scale shown in Appendix K, provided, however, that in no case shall an interterritorial all-rail class rate exceed the lowest rate that may be made by combining the local class rate, applicable within official territory to the traffic in question, governed by the applicable classification or exceptions thereto, to or from any one of specified gateways with the differential class rate applicable from or to the same gateway under the scale set forth in Appendix P to be governed by southern classification or exceptions thereto.
11. That in constructing rates between points in southern territory and points in Michigan, Vermont, New Hampshire, and Maine arbitraries may be added equivalent to those which are contemporaneously applied in making class rates between points

in the States named and other points in central or New England territory as the case may be.

12. That interterritorial all-rail class rates from or to points on other than standard lines, as defined herein, may be made by the addition of arbitraries for that portion of the haul over the lines not classed as standard.

13. That in the adjustment of class rates between central and southern territories Portsmouth and Ironton, Ohio, Ashland, Ky., and Kenova and Huntington, W. Va., shall be included within a single group, the distances to and from which shall be based on Ashland.

14. That hay, straw, shucks, grain, grain products, and grain by-products, rated class C or class D in southern classification, should be excepted for the present from the application of the class rates herein approved between official and southern territories and from Ohio and Mississippi River crossings to points in southern territory.

Fourth-section order entered and also an order modifying certain outstanding orders of the commission to the extent necessary to permit the carriers to make effective the rates prescribed herein.

### Railroad Boat Service in New York

#### Harbor Not Subject to Panama Canal Act

The commission, in a report prepared by Chairman Aitchison and dated July 11, holds that the lighterage service carried on by the railroads in New York harbor is not subject to any of the restrictions of the Panama Canal Act.

The principal New York railroads brought this question before the commission in February, 1914, but because of the world war the commission did not take action at that time; but now, acting on its own motion, it has revived the case.

The decision is, in substance, that this water service is simply an adjunct to the railroad service of these several companies and therefore does not come within the purview of the canal act.

There is one exception to this general statement; the passenger vessels of the Central of New Jersey, running between Manhattan (New York City) and Atlantic Highlands Pier, N. J., 20 miles, would come within the terms of the law; but the commission finds that this passenger service does not prevent or reduce competition, and therefore is not unlawful. The passenger tariffs of this steamer line must be filed with the commission to become effective September 16, 1925.

### State Commissions

The Texas Railroad Commission has ordered that in the application of intrastate freight rates and rules the St. Louis, Brownsville & Mexico, the Beaumont, Sour Lake & Western, the Orange & North Western, the International-Great Northern and the Houston & Brazos Valley shall be considered and treated as being under a single management and control. The question of the application of the single line rate as between the Texas & Pacific on the one hand and the Gulf Coast Lines and the International-Great Northern on the other hand, was held in abeyance for further consideration.

### Personnel of Commissions

J. P. Britt of Los Angeles, Cal., has been appointed assistant secretary of the Railroad Commission of California, with headquarters at Los Angeles.

Grant E. Haldeman, who recently retired as chairman of the Public Utilities Commission of Colorado, has been appointed senior examiner of the Bureau of Valuation of the Interstate Commerce Commission. Mr. Haldeman will assume his post in Washington on August 10.

### Court News

#### Yardmaster Operator Within Hours of Service Act

The Circuit Court of Appeals, Seventh Circuit, holds that a yardmaster in charge of the switching of cars in the Santa Fe's Chicago yards, who communicates with the towerman a few miles distant by telephone as to the movement of trains, was an "operator, train despatcher, or other employee" within the Hours

of Service Act, §2, and his communications were "orders," which the towerman was not at liberty to ignore.—*Atchison, T. & S. F. v. United States*, 3 F. (2d) 138.

### Forfeiture of Right of Way for Nonuser Denied

The federal district court for Utah holds that public interest does not require the forfeiture of the right of way for 20 miles up Salina Canyon acquired in 1902 by the Castle Valley Ry. Co., for failure to complete the section within five years after location, as provided in the Act of Congress of March 3, 1875, §4 (Comp. St. §4924) and for nonuser. After completion, but before it was used, the section was, in 1903, practically destroyed by floods and never fully restored. Forfeiture was denied.—*United States v. Denver & R. G.*, 2 F. (2d) 873.

### Federal Jurisdiction Exclusive as to Safety of Locomotives

The federal district court for northern Georgia holds that since Congress has provided for making regulations for the safety of locomotives, this field is exclusively occupied by federal legislation. The carriers have proposed and the commission has not required a rule of inspection providing for automatic firebox doors. Therefore Georgia Laws of 1924, p. 173, requiring locomotives to be equipped with such doors is held invalid as to locomotives engaged in interstate commerce.—*Atlantic Coast Line v. Napier*, 2 F. (2d) 891.

### Railroad Not Required to Ship Goods Over Shorter Route

The federal district court for southern New York holds that a shipper who has not required the publication of a rate between two points by a short route for which there is no published tariff, as he could do under the Interstate Commerce Act, §1, par. 4, as amended, cannot recover excess charges over what would have been reasonable rates by the direct route. If the railroad had received and transported the goods by any route without having published the rate, it would have been guilty of a misdemeanor.—*Swift & Co. v. New York Central*, 3 F. (2d) 826.

### Value of Goods Delivered to Wrong Persons

Plaintiff railroad company mistakenly delivered cotton to defendants, who, misled by the mistake, used the cotton in their business. The defendants offered to return the same quality of the same grade, or to pay the market price at place of delivery on date of delivery. Plaintiff demanded the value of the cotton at the place where and time when it should have been delivered. The Circuit Court of Appeals, Fourth Circuit, holds that "the defendants were entitled to prompt notice from the plaintiff whether it would elect to take the value of the cotton at the time defendants received it or take the cotton back. The plaintiff not having expressed its election within a reasonable time \* \* \* the right of election went over to the defendants to pay the value or hold the cotton subject to the plaintiff's order."—The defendants having elected the latter method, it was held the plaintiff was bound by it.—*Atlantic Coast Line v. Hollowell*, 2 Fed. (2nd) 674.

### Crossing Safeguards Provided Must Be Operated

The Circuit Court of Appeals, First Circuit, holds that a railroad company which has undertaken to protect the public by establishing posts and chains to close a crossing and has stationed a gatekeeper there to operate the chains, such protection being reasonable and necessary, cannot contend, in a grade crossing accident case, that the highway was not an "insular one" under the Porto Rico statutes, and that it was under no obligation to protect the crossing with posts and chains.—*American R. Co. of Porto Rico v. Ortega*, 3 F. (2d) 358.

Insular roads, under the Porto Rico statutes, are those built and maintained by insular funds, and railroads are required to maintain gates, chains or other protective devices over crossings thereon. The same court holds an instruction in a crossing accident case that the railroad, in the case of a special, unscheduled train, must use the utmost diligence and all means to protect travelers, placed too great a burden of care on the railroad.—*American R. Co. of Porto Rico v. Lopez*, 3 Fed. (2d) 876.

## Labor News

The second international conference on the proposed consolidation of railway unions into one organization has been called by O. H. Wangerin, St. Paul, Minn., who is secretary of the conference, to be held in Chicago on September 12 and 13. At the first conference in Chicago in December, 1922, a committee of 50 was appointed to carry on the work advocated at the meeting. Of the 360 persons present at that conference, the majority were formerly shop employees who at that time were still on strike. The leaders of the present railway labor organizations did not participate in this movement and advised their members not to attend.

### Labor College Conducts Railroad Institute

A "Railroad Labor Institute" has been in session during the past week at Brookwood Labor College, Katonah, N. Y. Those in attendance—about 35 in number—were for the most part general chairmen or other leaders of railroad labor unions, mainly in the shop crafts. The purpose of the institute was to give those in attendance an opportunity to increase their knowledge of the railroad industry—its history, organization and its problems in their more general aspects—rather than to offer instruction in any of the fields of primary union concern, such as wages, working conditions and the like.

One of the speakers at the institute was Otto S. Beyer, Jr., consulting engineer for the shop crafts unions, who has been largely in charge of the unions' part in installing the so-called "B. & O. Shop Co-operative Plan" on the Baltimore & Ohio, the Canadian National and other roads. Mr. Beyer stated that one of the principal reasons for the holding of the Railroad Institute was the desire to disseminate among the unions a greater interest in the railroad industry as a whole and to counteract their tendency to restrict their concern entirely to current problems of hours, wages and working conditions. The arousing of this interest in the functioning of the industry as a whole was necessary, he said, for the success of the Baltimore & Ohio plan, which includes as an integral part the co-operation of the unions in promoting the welfare of the industry and their aid in the solution of some of the problems of management.

The program of the institute included addresses and discussions on the following subjects: Growth of railways; management of railways; railway labor organization; railways during the war; "co-operative railroading" (B. & O. plan); control of wages; the art of cross-examination as applied to labor arbitration proceedings; the business cycle and its effects on labor; unemployment relief and prevention; and trade union policies.

Those who addressed the institute in addition to Mr. Beyer included D. J. Saposs of the Brookwood faculty; B. M. Jewell, head of the Railway Employees' Department of the American Federation of Labor; Donald Richberg, attorney for the shop crafts unions at Chicago; George Soule, editor of the *New Republic*; and Whiting Williams, engineer and publicist of Cleveland, Ohio.

This railroad institute is the first ever held by Brookwood College, but others are planned for the future.

## Labor Board Decisions

### Decision on Seniority

In a dispute between the Brotherhood of Railway and Steamship Clerks and the Southern on the question of the seniority status of two employees who entered the service of the Southern on the same day, the Railroad Labor Board held that the railway was within its rights in designating which of the two employees should have been assigned to a bulletined position. The board recommended, however, that a definite understanding be reached regarding the proper seniority standing of employees under such conditions to avoid future controversies of the same character.—*Decision No. 3842*.



## Foreign Railway News

### South African Railways Prosper

The South African Railways earned an operating net of £4,889,060 in the year ended March 31, 1925, according to Assistant Trade Commissioner Sullivan at Johannesburg. Receipts were £21,747,631 and expenses were £16,631,252. The total number of employees was 88,042—or 5,258 more than in the previous year. A total of 69,631,252 passengers were handled and 18,560,553 tons of freight.

### Suburban Electrification of Central

#### Argentine to Be Extended

The electrified suburban lines of the Central Argentine around Buenos Aires are to be extended from Retiro Station (Buenos Aires) to Villa Ballester (12½ miles) and from Belgrano Station to Tigre (8 miles), according to Trade Commissioner Brady at Buenos Aires. The work is estimated to cost approximately £1,000,000.

### Proposes Huge Causeway

#### Connecting England and France

A French engineer has proposed the erection of a causeway in the form of two parallel piers extending from England to France allowing a canal of smooth water for high speed vessels between them. On the piers proper would be highways and railways. The plan is proposed as an alternative to that for a railway tunnel under the channel.

### Colombian Government Takes

#### Over British-Owned Railway

The Colombian Northern, a short narrow-gauge railway operated in Colombia by a British corporation domiciled in London, has had its concession cancelled and its property taken over by the government of the country. The company received its concession in 1884 but did not complete its line until 1898. Meantime a number of alterations in the original concession had been agreed to. The government has now come to the conclusion that these alterations were illegal and has based its seizure of the property upon them. Modern Transport (London) in commenting upon the case says: "This individual case is important only to those concerned directly, but the principle involved is of great interest to all those engaged in the operation and financing of railways in Latin-America, which is the principal locality in which such incidents occur."

### Fall in Price of Coal Slows Up Swiss Electrification

The improvement of traffic and earnings on the Swiss Federal Railways in recent years brought about the general acceptance of the opinion that a period of steady recovery was definitely at hand and that the program for electrification was in the national interest from all points of view, according to Commercial Attaché Jones at Paris. Since the beginning of 1925, however, operations have not shown such favorable results, and it appears that the returns for 1924 may have reached a point which will not be equaled regularly.

As a consequence, it now appears questionable whether conclusions heretofore generally accepted are sound and whether the plans already adopted for railway development should not be materially modified. These points raise the questions as to whether the increase of the capital account necessary for carrying out the electrification program is justified, and whether the general electrification of the roads would be truly economic.

The capital account in 1924 already called for about 100,000,000 Swiss francs in service charges and 13,000,000 francs for amortization, or between 9,000,000 and 10,000,000 francs per month. With this heavy charge already undertaken and with the operation ac-

count showing less favorable returns during the first 4 months of 1925 than in the similar period in 1924, it is questionable whether it is wise to speed up the electrification program, which will in turn make greater the already heavy fixed charges.

Strength is given to the call for a revision of the electrification program by the fall in the cost of coal and the consequent reduction in the cost of operating steam equipment. The average price paid for mineral fuel in 1923 and 1924 was 53.11 Swiss francs for coal and 64.43 Swiss francs for briquettes delivered at the Swiss border. This brings the average cost per locomotive fuel during these years to 56.88 francs, compared with 63.50 francs as the cost of electric power equal to that produced by a ton of coal. Coal prices have continued to fall in 1925 and now stand at about 49 francs, with probabilities of further decreases.

Under these circumstances, with already heavy fixed charges, decreasing traffic, and high freight and passenger rates, it is obvious that the demand for a revision of the electrification program, or at least a slowing down of its execution until the economic outlook becomes clearer, will receive increasing popular support.

### British Railway Shares Decline

British railway shares have declined in price recently due to lower earnings. Recent figures, given by the Wall Street Journal, are as follows:

	Current Prices	Highest 1923
Great Western .....	87¼	118½
L. M. S. ....	79¼	118½
L. N. E. 5% pf. ....	59¼	89½
Southern 5% pf. ....	75¼	89½

Economies resulting from consolidation into four systems have been slow to materialize. The roads are, however, despite low earnings, still in a strong position due to strong reserves. They had to appropriate £5,000,000 from this source for 1924 dividend requirements, but £108,900,000 still remains. Meantime an effort is being made to get the railway unions to agree to wage reductions and there is much talk of the need for improving operating efficiency.

### Transport Institute Modifies

#### Membership Requirements

The Institute of Transport of Great Britain has modified somewhat its requirements for membership. Hereafter, applicants for the appellation of "graduate" may receive it without examination provided they have had five years' experience in some transportation enterprise and are more than 25 years of age. Persons 25 years of age or over who have had five years' experience in responsible positions may be elected associate members without examinations. Others aspiring to these two ranks of membership in the Institute will have to pass the examinations as formerly, although the number of subjects in which examinations are necessary is reduced from four to three in the case of applicants over 30 years of age who have had 10 years' experience in transportation. It is felt that the maintenance of examination requirements for the younger men and those not occupying positions of responsibility will stimulate the disposition to study among those who most require it without at the same time compelling it in the case of older men who occupy responsible positions already.

A SECOND WASTE RENOVATOR and oil reclaiming machine has been installed at its shops at River Rouge, Detroit, by the Detroit, Toledo & Ironton, and is reclaiming an average of 80 gal. of refined oil and 260 lb. of clean waste daily. The operation has been simplified to such an extent that the cost has been reduced considerably below the value of the oil and waste reclaimed.

THE AVERAGE COST OF COAL for road locomotives in freight and passenger train service (charged to operating expenses) in May was \$2.73 a ton, as compared with \$3.07 for May, 1924, and \$2.80 for the first five months of 1925, according to the monthly statement compiled by the Interstate Commerce Commission. The cost of fuel oil per gallon, however, was 3.24 cents as compared with 2.86 cents last May and the total cost of coal and fuel oil for the month was \$25,880,953, as compared with \$28,014,369 last May. For the five months period the total cost of coal and fuel oil was \$138,683,648, as compared with \$160,251,665 last year.

## Equipment and Supplies

### Locomotives

THE HOBI TIMBER COMPANY has ordered one Mikado type locomotive from the Baldwin Locomotive Works.

THE ALABAMA, TENNESSEE & NORTHERN has ordered one Consolidation locomotive from the Lima Locomotive Works.

THE FLORIDA EAST COAST has ordered 10 Mountain type locomotives from the American Locomotive Company. These locomotives will have 26 in. by 28 in. cylinders and a total weight in working order of 318,000 lb. The inquiry for this equipment was reported in the *Railway Age* of August 1.

### Freight Cars

THE MATHIESON ALKALI WORKS are inquiring for 20 tank cars of 15 tons' capacity.

THE TEXAS & PACIFIC has ordered 750 gondola cars from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of July 18.

THE SEABOARD AIR LINE has ordered 30 caboose cars from the Newport News Shipbuilding & Dry Dock Company. Inquiry for this equipment was reported in the *Railway Age* of July 18.

THE CUBA CANE SUGAR CORPORATION has ordered 50 cane cars of 30 tons' capacity from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of June 13.

THE CENTRAL OF GEORGIA has ordered 1,000 ventilated box cars from the Tennessee Coal, Iron & Railroad Company. The inquiry for this equipment was reported in the *Railway Age* of July 11.

THE MISSOURI-KANSAS-TEXAS has ordered 1,000 single sheathed box cars of 50 tons' capacity, from the Mt. Vernon Car & Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of July 25.

### Passenger Cars

THE NEW YORK, NEW HAVEN & HARTFORD is inquiring for 35 multiple unit passenger cars.

THE LEHIGH & NEW ENGLAND has ordered one gasoline-electric passenger car from the J. G. Brill Company.

THE SIAM STATE RAILWAYS have ordered one steam passenger car from the Baldwin Locomotive Works. This car will be equipped with a superheater.

THE UNITED RAILWAYS OF HAVANA have ordered 7 first class coaches and 12 third class coaches from the American Car & Foundry Company. Inquiry for this equipment was reported under the name of the Havana Central in the *Railway Age* of June 27.

THE NEW YORK, ONTARIO & WESTERN has ordered one 73-ft. combination passenger and baggage gasoline-electric car and one 73-ft. combination passenger, baggage and mail gasoline-electric car, from the J. G. Brill Company.

### Iron and Steel

THE GREAT NORTHERN has ordered 10,000 tons of rail, with the angle bars, from the Bethlehem Steel Company. The railroad expects to place orders for the balance of its requirements of rail, track fastenings and tie plates this week. Inquiry for this equipment was reported in the *Railway Age* of July 18.

### Machinery and Tools

THE NEW YORK CENTRAL has placed an order for a 48-in., 500-ton wheel press.

THE ATCHISON, TOPEKA & SANTA FE has placed an order for a 48-in. car wheel borer.

### Signaling

THE MISSOURI-KANSAS-TEXAS has ordered from the Union Switch & Signal Company material for a mechanical interlocking at Nevada, Mo., the crossing of the Missouri Pacific; a 32-lever Saxby & Farmer machine.

THE CENTRAL OF NEW JERSEY has contracted with the Union Switch & Signal Company for an electro-pneumatic interlocking at East Penn Junction, Pa.; 55 levers, operating 38 switches and 51 signals. Color-light signals will be used.

THE INTERBOROUGH RAPID TRANSIT COMPANY, New York City, has ordered from the Union Switch & Signal Company, the material for an electro-pneumatic interlocking, 35 levers, at 111th street, on the Queensboro line; also an electro-pneumatic interlocking, with a 19-lever machine, to be installed at Willet's Point Boulevard.

THE SOUTHERN PACIFIC has ordered from the National Safety Appliance Company, 136 track magnets and locomotive equipment, including forestalling valves, for 75 locomotives. This equipment is ordered for the completion of the second division of automatic train control and will be installed between Tracy, Cal., and Fresno, a distance of 126 miles. This is to correct an item published in the *Railway Age* of August 1 which omitted mention of the fact that the order included all locomotive equipment necessary and that it was for the completion of the second division of automatic train control.

THE NEW YORK CENTRAL LINES has signed contracts with the General Railway Signal Company for the installation of the intermittent inductive auto-manual automatic train control system upon seven divisions of the New York Central; two divisions upon the New York Central Railroad; two upon the Michigan Central; two upon the Cleveland, Cincinnati, Chicago & St. Louis; and one upon the Boston & Albany. The delivering of materials is to commence shortly and it is expected that an equal installation upon each division will be completed within a year. When completed it will mean that 2,600 miles of railway track and between 1,300 and 1,400 locomotives will be equipped with automatic train control. The cost of the installation will be between \$4,000,000 and \$5,000,000.

FREIGHT CAR REPAIR SITUATION

1924	Number freight cars on line	Cars awaiting repairs			Per cent of cars awaiting repairs	Month	Cars repaired		
		Heavy	Light	Total			Heavy	Light	Total
January 1.....	2,279,363	118,653	39,522	158,175	6.9	December .....	87,758	2,073,280	2,161,038
April 1.....	2,274,750	125,932	46,815	172,747	7.6	March .....	77,365	2,213,158	2,290,523
July 1.....	2,279,826	144,912	49,957	194,869	8.5	June .....	70,480	1,888,899	1,959,379
October 1.....	2,304,020	157,455	48,589	206,044	8.9	September .....	74,295	1,372,277	1,446,572
January 1, 1925.....	2,293,487	143,962	47,017	190,979	8.3	December .....	66,615	1,288,635	1,355,250
February 1.....	2,305,520	139,056	47,483	186,539	8.1	January, 1925.....	69,084	1,358,308	1,427,392
March 1.....	2,313,092	141,192	43,855	185,047	8.0	February .....	66,283	1,313,088	1,379,371
April 1.....	2,315,732	143,329	43,088	186,417	8.1	March .....	71,072	1,348,078	1,419,150
May 1.....	2,316,561	144,047	45,467	189,514	8.2	April .....	69,631	1,290,943	1,360,574
June 1.....	2,320,261	146,998	48,988	195,986	8.4	May .....	65,651	1,276,826	1,342,477
July 1.....	2,326,734	150,530	47,938	198,468	8.5	June .....	71,789	1,296,558	1,368,347

Data from Car Service Division Reports.



## Supply Trade News

The Ames Shovel & Tool Company, Boston, Mass., contemplates an addition to its Anderson, Ind., plant.

G. L. Walters, whose promotion to treasurer of the Adams & Westlake Company, Chicago, was announced in the *Railway Age* of July 25, page 205, was born in Chicago and entered the employ of the Adams & Westlake Company as a factory clerk in 1890. Later he entered the sales department and in 1908 was promoted to manager of sales of the railroad department. In 1911 his duties were extended and he was made manager of sales, railroad and brass department, which position he has held until his recent promotion.



G. L. Walters

Chicago. R. C. Blakslee, of the testing department of the Chicago, Rock Island & Pacific, with headquarters at Silvis, Ill., has resigned to become a service engineer for the Universal Packing & Service Company. T. P. Williams and J. D. Herr, formerly associated with the National Waste Company at Philadelphia, and W. M. Gibbs, formerly employed by the same company at Chicago, have been appointed service engineers of the Universal Packing & Service Company.

George P. Hoffman, general car foreman on the Baltimore & Ohio, Baltimore, Md., has resigned to join the sales force of the Grip Nut Company, Chicago, as district sales manager.



G. P. Hoffman

Mr. Hoffman was born at Meyersdale, Pa., on June 28, 1889, and was educated in the public schools and the Tri-State business college in Cumberland, Md. On September 1, 1907, he entered the service of the Baltimore & Ohio as an apprentice in the car department, and in 1912, was appointed supervisor, which position he held until he entered the United States Army, and served two years in the World War with the army in France. He entered the service as a private and was promoted to a commission. After receiving his discharge he returned to America and remained in government service as supervisor of car repairs with the Railroad Administration until he was reappointed general car foreman of the Baltimore & Ohio at Baltimore, which position he resigned to enter the service of the Grip Nut Company. Mr. Hoffman in his new position will be located in the East.

W. H. Davis, service engineer of the Universal Packing & Service Company, Chicago, has been promoted to general sales manager, with headquarters at

The General American Tank Car Corporation has removed its Los Angeles office from the Pacific Finance building to the Bartlett building.

William McConway, president of the McConway & Torley Company, died on July 28 in St. Francis hospital, Pittsburgh, Pa., at the age of 83.

The Northwest Engineering Company will construct a machine shop and assembling floor at Green Bay, Wis., to cost approximately \$75,000.

Arthur Jackson, 32 Glenholme avenue, Toronto, Ontario, has been appointed sales representative for Ontario and Eastern Canada of the Gibb Welding Machine Company, Bay City, Mich.

The R. K. LeBlond Machine Tool Company, Cincinnati, Ohio, has appointed the Federal Machinery Sales Company, Chicago, its sales representative for Chicago and adjoining territory.

B. E. Lindstrom, assistant to the manager of the Chicago office of the Barber-Greene Company, Aurora, Ill., has been promoted to manager of the Chicago office in charge of sales, to succeed George R. Bascom, deceased.

E. J. Tierney, in the service of the mechanical engineer's office of the Missouri Pacific, has resigned to go to the Grip Nut Company, Chicago, as district sales manager. Mr. Tierney



E. J. Tierney

was born at Attica, N. Y., on October 20, 1888, and was educated in the schools at Attica and Scranton. He entered the service of the Erie Railroad as a water boy and in 1902 went to the Missouri-Kansas-Texas as machinist's apprentice. In 1906 he went to the Missouri Pacific as a machinist. He subsequently served in the same capacity on the Colorado & Southern; Southern Pacific; Chicago, Burlington & Quincy; Galveston, Harrisburg & San Antonio and then returned to the Missouri Pacific

as shop draftsman. In 1908 he returned to the Missouri-Kansas-Texas as mechanical draftsman, and was promoted in 1913 to chief draftsman and general inspector of the Missouri-Kansas-Texas lines, which position he left to join the United States Army in France, where he served as a second lieutenant in the engineering corps, assigned to duty in Russia on the Trans-Siberian Railroad. He subsequently returned to France where he served in the army for one and one-half years. After his discharge from the army, he returned to the Missouri-Kansas-Texas. In 1920 he was appointed mechanical engineer of the Louisiana & Arkansas, and two years later served in the same capacity with the Midland Valley. He subsequently resigned to return to the Missouri Pacific as inspector, gang foreman and general draftsman, which position he held until his appointment with the Grip Nut Company, as above noted. Mr. Tierney will be located in Chicago.

The Kuhlman Electric Company, Bay City, Mich., has appointed the Stevens Sales Company, 134 West Second South street, Salt Lake City, Utah, as its district representative for the state of Utah and parts of Idaho and Nevada, adjacent to Utah.

J. W. Cain & Company, Houston, Texas, has been appointed southwestern representative for the Orton & Steinbrenner Company. The Burnite Machinery Company, Denver, Colo., has been appointed western representative of the Orton & Steinbrenner Company.

The Tennessee Engineering & Sales Company, 510 Burwell building, Knoxville, Tenn., has been appointed agent in part of Tennessee and Kentucky within a working radius of the city of Knoxville, for the Roller-Smith Company, New York.

L. Klopman, treasurer and general manager of the Railway Storage Battery Car Company, New York, has resigned to become vice-president and treasurer of the Revivo Battery Corporation with factory at Garfield, N. J., and office at 46 West Twentieth street, New York City.

Joseph V. Miller, western sales representative of the Prime Manufacturing Company, Milwaukee, Wis., has resigned to go to the Chicago, Milwaukee & St. Paul as assistant general storekeeper. C. Arthur Dunn, eastern sales representative of the Prime Manufacturing Company, with headquarters at Philadelphia, has been promoted to sales manager, railway division, with headquarters at Milwaukee.

The More-Jones Brass & Metal Company is completing the erection at St. Louis, Mo., of a modern and large plant which will be devoted to the production of brass and bronze castings. The plant will consist of a foundry and machine shop which will provide a total floor area of 157,000 sq. ft. The railroad facilities for the plant will consist of a double spur track for loading and unloading 10 cars and a yard capacity of 20 cars.

### American Locomotive Company

#### Six Months' Statement

The semi-annual report of business of the American Locomotive Company for the first six months of 1925 shows gross earnings of \$16,444,588 as compared with \$26,855,332 in the first six months of 1924. Available profit for the first half of this year was \$212,718 comparing with \$2,883,185 in the same period of last year.

President Andrew Fletcher, in his remarks to stockholders, says in part:

"There has been very little demand for new locomotives since April, the railroads of the country having materially reduced their usual purchases. A depression in the company's business has resulted, but we believe the condition is but temporary. The new business obtained during the six months' period amounted to about 32 per cent of that obtained during the similar period ending June 30, 1924, and the prices received carried a very small margin of profit. The percentage of all plant operations to rated capacity averaged about 29 per cent for the six months' period. This includes the Montreal Locomotive Works, which operated at an average of about 2 per cent of its capacity during the six months as compared with 21 per cent for the similar period of 1924 and 63 per cent in 1923. During the last six months the Montreal plant operated at the lowest rate of its capacity of any similar period since its purchase 20 years ago. The depression existing in the locomotive business in Canada we believe is also but temporary.

"On June 30 the excess of current assets over current liabilities amounted to \$40,922,197, after including in current liabilities \$2,500,000 for the remaining two extra dividends each of \$2.50 per share, declared March 5, 1925, on the common stock, and an allowance of \$2,085,989 for reserves to provide for shrinkage in value of notes and bills receivable and for United States and Canadian income taxes.

"The company on June 30 had no loans payable to banks or others, and had in its treasury \$30,865,367 in cash and marketable securities, of which \$27,465,996 was in United States Treasury Certificates, Bonds and Notes, and government securities of the Dominion of Canada.

"The inventory account of materials and supplies, contract work in process, stock locomotives and spare parts on hand June 30, 1925, amounted to \$8,107,054."

The condensed income statement for the six months ended June 30, 1925, follows:

Gross earnings .....	\$16,444,588
Manufacturing, maintenance and administrative expenses.....	15,488,572
Gross profit .....	\$956,016
Interest on bonds of constituent companies, etc.....	13,038
Net profit .....	\$942,978
Deduct allowance for depreciation.....	730,260
Available profit for the six months ended June 30, 1925....	\$212,718

### Obituary

Francis J. Llewellyn, western division contract manager of the American Bridge Company, with headquarters at Chicago, died in Portland, Ore., on July 25, from heart trouble.

George Horace Bryant, a broker of railway supplies and formerly western representing of the Krupp Steel Works, with headquarters at Chicago, died in that city on July 10 as a result of an accidentally inflicted gun-shot wound.

## Railway Construction

**BOSTON & MAINE.**—A general office building for use by this company will be built on property which it owns near Lechmere square, Cambridge, Mass. Space vacated in North station will be utilized for business purposes and general offices now housed in other buildings will be brought under one roof in the new structure. A fireproof building, 51 ft. by 305 ft., of seven or eight stories is planned.

**CHICAGO, MILWAUKEE & ST. PAUL.**—This company will construct a roundhouse at Sioux City, Iowa, to replace a 15-stall roundhouse destroyed by fire on August 4.

**DENVER & RIO GRANDE WESTERN.**—The application made early this year to the Interstate Commerce Commission for authority to construct a branch line from Soldier Summit, Utah, to Vernal, a distance of 132 miles, has been withdrawn.

**FLORENCE, CLIFTON & PADUCAH.**—According to A. P. Campbell, Florence, Ala., who is president, the first part of the line to be constructed, if approval is granted by the Interstate Commerce Commission, will be from Florence, Ala., to Parsons, Tenn., a distance of 85 miles. As reported in the *Railway Age* of August 1, application has been made to the Interstate Commerce Commission for authority to construct 225 miles of new railroad from Florence, via Collinwood, Tenn., Waynesboro, Clifton, Parsons, Camden, Paris, and Mayfield, Ky., to Paducah.

**GRAND TRUNK WESTERN.**—This company has awarded a contract to the Federal Cement Tile Company, Chicago, for concrete cribbing units for 25,000 sq. ft. of retaining walls to be built in connection with the West Detroit grade separation project.

**MISSOURI PACIFIC.**—This company, jointly with the city of Little Rock, Ark., plans to construct a concrete viaduct over its tracks at Main street in Little Rock at a cost of approximately \$180,000.

**NEW MEXICO CENTRAL.**—The Interstate Commerce Commission has authorized this company to construct approximately 100 miles of line northwest from Gallina, N. M., at a cost estimated at \$2,106,525 (which the commission believes too low) provided that not more than 50 per cent of the capital required for making the improvement is raised by the issue of bonds. Construction must be begun by January 1, 1926, and completed within years.

**NORFOLK & WESTERN.**—This company has awarded a contract to J. P. Pettyjohn & Co., Lynchburg, Va., for an extension to its enginehouse at Williamson, W. Va., at an estimated cost of \$30,000.

**SAN ANTONIO & ARANSAS PASS.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing construction of an extension from Edinburg, Hidalgo county, Tex., to Harlingen, Cameron county, a distance of 30 miles, to provide an outlet for a rich agricultural section in the two counties on the north side of the Rio Grande.

**WEST PITTSBURGH-EXETER.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing construction of a line from a point on the Delaware, Lackawanna & Western at West Pittston, Luzerne County, Pa., paralleling the Susquehanna river, a distance of 4 miles.

### Proposed Line from Salt Lake

#### to Connect with Moffat Road

The construction of a line from Salt Lake City, Utah, to connect with the Denver & Salt Lake at Craig, Colo., is proposed by a group including Harry H. Berger, Los Angeles, Cal., Alexander Berger, Fredericksburg, Va., and others. An examiner of the Interstate Commerce Commission heard the plans for the line at Denver, Colo., on July 31. The promoters estimate the cost at approximately \$15,000,000.



## Railway Financial News

**ANTHONY & NORTHERN.—Final Valuation.**—The Interstate Commerce Commission has issued a final valuation report finding the final valuation for rate-making purposes of the property owned and used for common-carrier purposes, as of 1919, to be \$960,300.

**ASHLEY, DREW AND NORTHERN.—Tentative Valuation.**—The Interstate Commerce Commission has served a tentative valuation report placing the final value for rate-making purposes of the owned property at \$430,000, as of June 30, 1918.

**BUFFALO, ROCHESTER & PITTSBURGH.—Common Dividend Resumed.**—The directors have declared a dividend of \$2 a share on common stock and the regular semi-annual dividend of 3 per cent on the preferred, both payable August 15 to holders of record August 8. In January last the dividend on the common stock was passed. Semi-annual disbursements of \$2 a share had been made from 1919 to 1924, inclusive.

**BUTLER COUNTY.—Final Valuation.**—The Interstate Commerce Commission has issued a final valuation report finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$907,940 as of 1916.

**CANADIAN NATIONAL.—Operating Results in June.**—Gross earnings, operating expenses, and net earnings for the month of June and for the six months, compare as follows:

	1925	1924
June		
Operating revenues	\$18,204,662	\$19,678,067
Operating expenses	18,637,038	20,604,450
Operating deficit	432,376	926,383
Six months		
Operating revenues	105,543,743	114,862,558
Operating expenses	101,801,397	112,233,128
Operating net	3,742,346	2,629,430

**CANADIAN PACIFIC.—June Earnings.**—Net earnings for June totalled \$1,584,450, a decrease of \$875,198 from the same month last year. Gross earnings showed a decrease of \$1,670,985 and working expenses were cut \$795,787. The following statement shows earnings for the month of June this year as compared with June last year:

	1925	Decrease
Gross earnings	\$13,464,647	\$1,670,985
Working expenses	11,880,196	795,787
Net	\$1,584,450	\$875,198

Earnings and expenses for the six months ended June 30, 1925, with comparisons for the same period last year are as follows:

	1925	Decrease
Gross earnings	\$75,155,819	\$9,501,097
Working expenses	67,358,173	6,908,658
Net	\$7,797,646	\$2,592,438

**CHESAPEAKE WESTERN.—Final Valuation.**—The Interstate Commerce Commission has issued a final valuation report as of 1916 finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$343,837.

**CHICAGO & ILLINOIS MIDLAND.—Purchases Part of C. P. & St. L.**—The Chicago & Illinois Midland, a short coal road extending from Auburn, Ill., to Taylorville, which is owned by the Commonwealth Edison Company of Chicago, has concluded a preliminary agreement with the bondholders' protective committee of the Chicago, Peoria & St. Louis for the purchase of the part of the line of the latter road between Springfield, Ill., and Pekin.

**CHICAGO, MILWAUKEE & ST. PAUL.—Authorized to Abandon Branch.**—The Interstate Commerce Commission has authorized this company to abandon that part of its Tomah-Babcock line extending from Tomah, Wis., to Norway, 13 miles but application covering a contemplated abandonment of the line between Norway and Babcock was denied.

**CHICAGO, MILWAUKEE & ST. PAUL.—Arguments for Potter Plan.**—The receivers of the Chicago, Milwaukee & St. Paul have issued a statement briefly summarizing the arguments in favor of the "St. Paul Receivers' Plan" for a minimum rate increase which was originated by Mark W. Potter, one of the receivers. The statement is abstracted below:

(1) A pooling plan is advocated by the St. Paul receivers because they believe it conforms to the principles outlined in the transportation act, is economically sound, and would place the least burden upon the public.

(2) The legal aspects of the pooling plan have been carefully considered, and there is no question that the Interstate Commerce Commission can give its approval to this plan if it considers that it best serves the public interest. The proposed pooling plan is supported by decisions of the United States Supreme Court. Ex-Secretary Charles E. Hughes, who is to advocate the "St. Paul Receivers' Plan" before the state and interstate commissions, is convinced that the plan is lawful and constitutional. The right of carriers under fundamental law and the aim of the transportation act is to obtain a fair return to all carriers without excess or deficit to any.

(3) Under the plan proposed the proceeds from the minimum rate increase would be regarded not as regular earnings, but as the provision of a definite sum by shippers for the specific purpose of enabling the western lines as a whole to receive, as nearly as may be, a fair return from their operations. The Supreme Court has held that a shipper on a prosperous line which serves him is interested in the maintenance of efficient transportation on a less prosperous line which at the moment does not serve him. Shippers everywhere are interested in the maintenance of transportation everywhere. A pooling arrangement is appropriate machinery to carry out this principle.

(4) The pooling plan does not remove the incentive to be efficient. Obviously a carrier earning less than a fair return retains its incentive to earn all it can. The more efficient it is, the more it has. Nor is it conceivable that any railway official would deliberately make a record of inefficiency in order to defeat the spirit and purpose of the law. Any attempt to do so would be discovered promptly. No efficient carrier would seriously argue that it would deliberately become inefficient.

(5) There is no conflict between the pooling plan and the "recapture" clause of the Transportation Act. Under the pooling plan the proceeds from the 5 per cent increase would not be regarded as earnings of any carrier until distribution had been effected, after which the provisions of the transportation act would apply with respect to sharing with the government any excess of net operating income over 6 per cent on property value.

(6) Criticism cannot justly be made because the proposed plan deals with the investment in the railroads. The investment is the best practical basis at the present time on which to work out the railway problem.

**CHICAGO, TERRE HAUTE & SOUTHEASTERN.—Final Valuation.**—The Interstate Commerce Commission has issued a final valuation report finding the final valuation of the property owned and used for common-carrier purposes, as of June 30, 1916, to be \$20,150,000. The company had claimed a value of not less than \$30,000,000. The investment in carrier property, including land, was stated in the books as \$24,927,762, of which, the report says, \$20,995,114 represents the par value of securities issued or assumed.

**COLORADO, WYOMING & EASTERN.—Tentative Valuation.**—The Interstate Commerce Commission has served a tentative valuation report placing the final value for rate-making purposes of the owned and used property at \$1,882,785, as of June 30, 1919.

**COMBS, CASS & EASTERN.—Abandonment.**—This company has applied to the Interstate Commerce Commission for authority to abandon 9.08 miles of its line, from Cass to Frazer, Ark.

**COUDERSPORT & PORT ALLEGANY.—Abandonment of Line.**—The Interstate Commerce Commission has issued a certificate authorizing this company to abandon 6.64 miles of line from Newfield Junction, Pa., to Ulysses.

**COWLITZ, CHEHALIS & CASCADE.—Permitted to Retain Excess Earnings.**—Upon further consideration, the Interstate Commerce Commission has granted permission to this company to retain excess earnings as provided in Paragraph 18 of Section 15-a of the Interstate Commerce Act, on the construction of an extension from Lacamas, Wash., 14 miles.

**CROSBYTON-SOUTH PLAINS.—Tentative Valuation.**—The Interstate Commerce Commission has served a tentative valuation report placing the final value for rate-making purposes of the property owned and used at \$428,195, as of June 30, 1916.

**DETROIT TERMINAL.—Tentative Valuation.**—The Interstate Commerce Commission has served a tentative valuation report placing the final value for rate-making purposes of the used property of the carrier at \$3,858,100, as of June 30, 1918.

**EASTERN KENTUCKY.—Abandonment.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from Riverton to Webbville, Ky.

**GULF & INTERSTATE OF TEXAS.—Acquisition.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to acquire and operate a line formerly owned by the Santa Fe Dock & Channel Company, consisting of 4.54 miles of yard tracks and sidings, to enlarge its terminal facilities at Port Bolivar, Tex.

(Continued on page 295)

# Annual Report

## Thirty-Sixth Report of the Great Northern Railway Company

### To The Stockholders:

The Board of Directors submits the following report for the year ended December 31, 1924.

#### Capital Stock

There has been no change during the year in the authorized share capital, same remaining at \$250,000,000, of which there had been issued to December 31, 1924..... \$249,478,250

#### Funded Debt

There has been an increase of \$16,986,700 in the funded debt, made up as follows:

By issue of the Company's General Mortgage 5 per cent. Gold Bonds, Series "C", dated January 1, 1923, maturing January 1, 1973.....	\$15,000,000	
By issue of 4½ per cent. Trust Certificates—Great Northern Railway Equipment Trust—Series "C", dated September 1, 1924. Repayment in fifteen installments respectively on September 1, 1925, and on the first day of September in each year thereafter to and including September 1, 1939....	4,500,000	\$19,500,000
<b>Less—</b>		
St. P., M. & M. Ry. Co. Consolidated Mortgage bonds redeemed through the operation of the Sinking Fund, as per statement on page 21.....	\$44,000	
Repayment of balance of loan from the U. S. Government, made November 1, 1920.....	1,608,000	
Note maturing January 15, 1924, under Equipment Trust Agreement dated January 15, 1920.....	286,300	
Note maturing September 1, 1924, under Great Northern Railway Equipment Trust—Series "B", dated September 1, 1923.....	575,000	2,513,300
<b>Net increase .....</b>		<b>\$16,986,700</b>

#### General Gold Bond Mortgage—Series "C" Bonds

To reimburse the treasury in part for money expended for additions and betterments, construction of new lines, etc., not previously capitalized, there was issued and sold \$15,000,000 principal amount of the Company's General Mortgage 5 per cent. Gold Bonds, Series "C," authorized by the Interstate Commerce Commission by its order dated June 22, 1923. Bonds were dated January 1, 1923, to bear interest at the rate of 5 per cent. per annum payable semi-annually on January 1 and July 1 in each year, and to mature January 1, 1973. These bonds were sold for cash at 90 per cent. and accrued interest from January 1, 1924.

### Great Northern Railway Equipment Trust, Series "C"

This trust was created by agreement dated September 1, 1924, to which the Great Northern Equipment Company, The First National Bank of the City of New York, Trustee, and the Great Northern Railway Company are parties. Under the trust \$4,500,000 of 4½ per cent. equipment trust certificates maturing in equal annual installments of \$300,000 over a period of fifteen years are issuable, representing approximately 75 per cent of the cost of the equipment leased by the Trustee to the railway company. The equipment under the trust consists of twenty-nine locomotives, four tenders, ten dining cars, fifty express refrigerator cars, three thousand and twenty-five freight cars of various types, and two locomotive cranes. These certificates were sold for cash at 96.74 per cent. and accrued interest.

#### Consolidation

There is no change in the status with respect to the consolidation of the properties of the Great Northern, Northern Pacific and Burlington, as outlined on page 5 of the 1923 annual report to the stockholders.

#### Valuation

The taking of testimony in the valuation hearing before the Interstate Commerce Commission, which was referred to in the annual report for 1923, was completed in February, 1925. Following the filing of briefs it is expected that the argument before the Commission will take place the latter part of October, 1925.

#### Pension Department

During the year the number of pensioners increased from 188 to 223, through the addition of 48 employees retired and a decrease of 13 through death. Pensions paid for 1924 amounted to \$93,175.60.

The Board respectfully calls attention of the Stockholders to the reports of the President, of the Comptroller, with customary balance sheet and statistical tables, and of the Land Commissioner.

For the Board of Directors.

LOUIS W. HILL,  
Chairman.

June 30, 1925.

## Report of President

### To the Board of Directors:

On January 22, 1925, a brief report was sent to each shareholder giving income statistics for the year 1924 and commenting on salient facts concerning the year's operation. Similar statistics for the first six months of 1925 and 1924 will show approximately the following:

	1925 (Partly estimated) See note	1924
Revenue from freight transportation.....	\$35,600,000	\$34,425,248
Revenue from passenger transportation.....	6,200,000	6,229,771
Revenue from mail, express, and other transp'tion	4,800,000	5,022,639
<b>Total railway operating revenues.....</b>	<b>\$46,600,000</b>	<b>\$45,677,658</b>
Railway operating expenses.....	35,700,000	36,067,963
<b>Net revenue from railway operations.....</b>	<b>\$10,900,000</b>	<b>\$9,609,695</b>
Taxes .....	4,500,000	4,625,738
Equipment and joint facility rents (credit).....	250,000	826,144
<b>Net railway operating income.....</b>	<b>\$6,650,000</b>	<b>\$5,810,101</b>
*Other income .....	5,400,000	5,794,832
<b>Total income .....</b>	<b>\$12,050,000</b>	<b>\$11,604,933</b>
†Interest and other income deductions.....	9,050,000	8,909,361
<b>Balance available for dividends.....</b>	<b>\$3,000,000</b>	<b>\$2,695,572</b>

\*Includes \$4,150,900 dividend from C. B. & Q. stock.

†Includes \$4,025,000 interest on bonds issued for purchase of C. B. & Q. stock.

NOTE: Actual figures compiled after preparation of annual report show net railway operating income for first six months of 1925 of \$6,844,566 and balance available for dividends of \$3,051,355.

### Net Railway Operating Income

ITEM	1924	1923	1922
Average mileage of road operated.....	8,251.44	8,254.21	8,260.71
Transportation revenue.....	\$107,486,902	\$116,965,370	\$100,843,344
Incidental operating revenues.....	2,756,202	3,112,401	2,609,593
<b>Total ry. operating revenues.....</b>	<b>\$110,243,104</b>	<b>\$120,077,771</b>	<b>\$103,452,937</b>
Railway operating expenses.....	75,212,059	86,750,523	79,636,038
<b>Net operating revenue.....</b>	<b>\$35,031,045</b>	<b>\$33,327,248</b>	<b>\$23,816,899</b>
Railway tax accruals.....	10,257,741	9,113,226	8,097,725
Uncollectible railway revenues.....	12,267	20,982	15,534
<b>Railway operating income.....</b>	<b>\$24,761,037</b>	<b>\$24,193,040</b>	<b>\$15,703,640</b>
Equipment rents—net .....	Dr. 304,269	Cr. 806,631	Cr. 1,799,023
Joint facility rents—net.....	Dr. 255,481	Dr. 267,679	Dr. 226,065
<b>Net railway operating income..</b>	<b>\$24,201,287</b>	<b>\$24,731,992</b>	<b>\$17,276,598</b>
<b>Ratio of expenses to revenues....</b>	<b>68.2</b>	<b>72.2</b>	<b>77.0</b>

The railway operating revenues in 1924 were approximately \$10,000,000 less than in 1923. This decrease was more than offset by a decrease in the operating expenses. The average cost of handling 100 tons of freight one mile was 57.6 cents in 1924 as compared with 63.3 cents in 1923; the operating ratio was reduced from 72.2 in 1923 to 68.2 in 1924. This was accomplished by economies resulting from the use of improved facilities, such as

[ADVERTISEMENT]



enlarged terminals and passing tracks, additional second track, automatic block signals, grade reductions, more powerful and better locomotives, and modern shop and roundhouse machinery and tools, all of which, of course, involved the expenditure of large capital sums. Another important element in operating economy was the individual efficiency and cooperation of the employees with the management.

Great Northern taxes have increased from \$4,790,573 in 1914 to \$10,257,741 in 1924, an increase of 114 per cent.—an average of 11.4 per cent. annually. The above tabulation shows that for the year 1924, taxes increased more than \$1,000,000 compared with 1923, and that in 1923 they increased more than \$1,000,000 compared with 1922—a 26.7 per cent. increase from 1922 to 1924, or an average of 13.35 per cent. each year. Startling as the figures are for the decade ending in 1924, even more startling is the fact that the rate of increase in the last two years was more rapid than at the beginning. Considerable concern is evidenced about the need of improved net railway income and it is indeed a most serious question, not only for the railroads, but for the public as well. The public aspect of the question seems to be reasonably well understood, but practical remedies are not easy to find and very few have even been suggested. Discussion of the question shows much bewilderment of thought, but it should be simple for all to agree that reduction of railway taxes affords one very effective and positive means of lowering the cost of producing transportation, which is a prerequisite to lower freight rates or to the avoidance of increases in the present rates.

There was general demand for equipment throughout 1923 which enabled the Company to have use made of its cars by other lines in its off season period during the early part of the year. The same condition did not prevail in 1924, many cars remaining idle prior to harvest time. Notwithstanding this decrease in revenue from its cars used by other lines it was necessary for the Great Northern to pay rental for a large number of foreign cars which it accumulated and used in moving the heavy grain crop. This resulted in an increased cost in operation of over \$1,100,000 as compared with the previous year in the item of car rental alone.

#### Freight Traffic

A synopsis of the tons of freight moved and revenue received for the years 1924 and 1923 is given below.

Commodity	1924		1923		Increase—I; Decrease—D	
	Tons	Gross Revenue	Tons	Gross Revenue	Tons	Gross Revenue
Products of agriculture.....	6,610,351	\$28,621,715	6,352,483	\$29,846,516	I 257,868	D \$1,224,795
Animals and products.....	526,012	3,851,517	505,942	3,436,271	I 20,070	I 415,246
Products of mines.....	17,803,622	19,217,017	22,222,252	21,610,937	D 4,418,630	D 3,393,920
Products of forests.....	3,500,672	13,524,004	4,100,198	15,214,616	D 599,526	D 1,590,612
Manufacturers and miscellaneous.....	3,229,093	21,830,418	3,204,521	23,563,813	I 24,572	D 1,733,395
Total .....	31,669,750	\$86,144,671	36,385,396	\$93,672,147	D 4,715,646	D \$7,527,476

In 1924 the Company handled 156,000,000 bushels of grain as compared with 146,000,000 bushels in 1923. The total revenue from this commodity was less than in 1923. The 1924 crop was raised and marketed at stations located nearer the eastern termini and the shorter haul this year produced less revenue per ton than in 1923. There was a decrease in fruit shipments, owing to the smaller crop of apples in Washington. Potato shipments also decreased from the high figure of 27,311 cars in 1923 to 23,223 cars in 1924.

Shipments of live stock, dairy and poultry products are increasing each year, indicating progression in diversified farming in the Company's territory.

The decrease in tonnage of products of mines was caused by a general falling off in the iron and steel trade during the latter half of 1924.

Present indications are that there will be more traffic from all products of agriculture, including animals and animal products, in 1925 than there was in 1924 and that the ore movement will be about the same.

#### Passenger Traffic

Long haul passenger traffic has increased during the year, the decrease in total passenger revenue being entirely due to the loss in short haul traffic. For local travel the public is using motor buses and privately owned automobiles in preference to the railroads. The Great Northern, two years ago, put in service four gasoline driven railway motor cars. To extend this method of operation the Company has purchased four gas-electric cars, fifty-five feet in length and having sufficient power to pull a passenger car as a trailer. They will be placed in service in May and June, 1925.

Effective April 1, 1925, the Great Northern, Northern Pacific, and Union Pacific pooled the passenger train service on the joint line between Seattle, Washington and Portland, Oregon. Through this arrangement an improved passenger train service, between

these two important cities, will be furnished at less expense than formerly.

#### Oil Development in Montana

The development of the oil industry is increasing. There are now 218 wells in the Kevin-Sunburst field, which produced over 1,000,000 barrels of crude oil in 1924. Two refineries have been constructed at Kalispell, Montana, and the capacity of the refineries at Great Falls and Lewistown, Montana, increased.

#### Immigration and Agricultural Development

One of the most important developments, in Great Northern territory, has been the establishment of three sugar factories, located at Sidney, Montana, Chinook, Montana, and at Bellingham, Washington. These factories represent an investment of over \$3,500,000 and they will be ready for operation in time for the 1925 crop, contracts having been made for over 30,000 acres of beets. In addition, a sugar factory is under construction at East Grand Forks, Minnesota, which will be ready for operation in time for the 1926 crop.

The Agricultural Credit Corporation was organized at the request of President Coolidge after Congress had declined to enact a law granting assistance to farmers. It was financed through subscriptions to Collateral Trust Income Gold Bonds by private individuals and corporations, including the railroads of the Northwest. Through the medium of this corporation 236 banks in the Northwest were assisted by loans in excess of \$4,000,000. In the Spring of 1924 \$1,000,000 was appropriated for the purpose of aiding in the purchase of livestock in order to further the diversification movement. Farmers in Minnesota, North Dakota and Montana obtained 1,835 cows and over 12,000 ewes. The financing of livestock will be continued in 1925 in a similar manner. In addition to this the purchase of a large amount of livestock was financed through other private sources.

#### Western Fruit Express Company

The traffic arrangement entered into with the Western Fruit Express Company and the Fruit Growers' Express Company, which became effective September 1, 1923, has proved satisfactory. The Western Fruit Express Company owns 5,400 cars and has 1,000 cars under lease. The Fruit Growers' Express Company, which

has common officers with the Western Fruit Express Company and operates in the southeastern part of the United States, owns 17,900 cars. The fact that the peak requirements of these two companies come at different times of the year is advantageous to both.

#### Maintenance of Track, Structures, and Equipment

The high standard of roadway maintenance was continued and the track is in first class condition. Fifty per cent. of the ties placed in 1924 were subjected to a preservative treatment. This treatment doubles the life of the tie and as a measure of economy more treated ties are being placed each year. The outstanding feature of the 1924 maintenance program was the improvements made on bridges, although a large part of these expenditures are included in the investment account. The more important steel bridges erected many years ago and designed for the power then in use no longer provided an adequate margin of strength for the power now in service. The completion of this program, in 1925, will place all important bridges in a condition suitable for the operation of any class of locomotive at any speed.

The decrease in the cost of maintaining the equipment is partly due to a substantial reduction in payments made to other railroads, for repairs to cars under the American Railway Association rules. There were more of this company's cars at home in 1924 than in 1923 and the cost of maintenance was, therefore, much less than when the repairs are made by other railroads and paid for under the rules. The fact that such a large percentage of Great Northern cars are in its line so much of the year is an important factor in enabling it to keep its equipment in splendid condition at relatively low cost. A contributory factor in reducing the maintenance was the extensive rebuilding program commenced several years ago which resulted in less heavy repair work in 1924 than in 1923. The program of strengthening and rebuilding the light freight equipment has been continued. Twenty-five hundred units of equipment were rebuilt in 1924. These cars are turned out of the shops with an expectancy of life equal to new equipment of similar type.

[ADVERTISEMENT]

## Group Insurance

In 1923, the Company put into effect a group insurance plan, for the protection of its employees in the shops and storehouses, as well as for linemen and supervisory forces in the Operating and Mechanical Departments. During the year 1924, the plan was further extended to cover executives and employees holding exempted clerical positions. The contract is with the Metropolitan Life Insurance Company, and the premiums are borne partly by the Company and partly by the employees.

At the close of the year, over 8,500 had taken advantage of the plan with an aggregate life insurance in force of approximately \$19,000,000 and nearly the same amount for accidental death and dismemberment. The plan also provides for weekly indemnity for sickness and accidents.

## Equipment

Additional equipment for 1925 delivery has been contracted for or will be constructed at Company shops, including equipment contracted for 1924 delivery but not received at the close of the year, as follows: 4 simple articulated freight locomotives, 17 Mikado type locomotives, 2 dining cars, 42 express refrigerator cars, 1,000 automobile cars, 600 box cars, 500 stock cars, 500 steel ore cars, 25 caboose cars, 40 air dump cars, 1 rotary snow plow, 1 locomotive crane and ditcher, 1 steel spreader, 4 gas-electric motor cars and 4 electric locomotives.

Total amount expended by Great Northern Equipment Company and Great Northern Railway Company for equipment purchased, built at shops, and for improvements to equipment in service, was \$8,517,893.16. The original cost of the equipment taken out of

service, conversions and adjustments, amounted to \$10,671,353.61, resulting in a net credit in Investment in equipment of \$2,153,460.45.

## Additions and Betterments

The following is a list of the more important additions and betterments made to the property during the year:

160 miles of main track relaid with heavier steel,  
13.61 miles of second track constructed between Lohman and Havre, Montana,  
7.42 miles of second track, including tunnel 1,396 feet long and retaining wall containing 10,000 cubic yards of concrete, between Kootenai Falls and Troy, Montana,  
5,308 feet of new line at Talbot, Montana, in place of 7,690 feet of old line,  
3.4 miles grade reduction between Tudor and Baden, Minnesota,  
3.1 miles grade reduction between Scotia and Newport, Washington,  
7,400 feet grade reduction at Yakt, Montana, and 5,600 feet at Sand Point, Idaho,  
4,508 lineal feet of bridges filled,  
5,474 lineal feet of new steel and concrete bridges,  
6,113 lineal feet of steel bridges reinforced,  
80 miles of right of way fencing constructed,  
New terminal post office constructed at Seattle, Washington.  
Grade separations, Minneapolis, Minnesota.

## Investment in Road

Net charges during the year totaled \$6,336,538.83.

Some of the more important improvements in progress or which are contemplated are: New engine terminal at Troy, Montana; gravel washing plants at Chinook and Warland, Montana; new power plant at Minot, North Dakota; extensions to passing tracks and additional passing tracks at 33 stations; second track, 5.26 miles, between Kelly Lake and Emmert, Minnesota; rebuilding with concrete and steel, the inner one-third of ore dock No. 1, at Allouez, Wisconsin; enlarging tie treating plant at Somers, Mont-

## General Balance Sheet

ASSETS			LIABILITIES		
INVESTMENTS			STOCK		
	December 31, 1924	December 31, 1923		December 31, 1924	December 31, 1923
Investment in road and equipment:			Capital stock—Book liability.....	\$249,478,250.00	\$249,478,250.00
Road .....	\$362,915,720.33	\$356,585,538.43	Less—Held by or for carrier.....	1,100.00	1,100.00
Equipment .....	96,998,217.80	104,954,549.69	Outstanding .....	\$249,477,150.00	\$249,477,150.00
	\$459,913,938.13	\$461,540,088.12	Premium on capital stock.....	81,268.44	81,268.44
Improvements on leased railway property...	133,135.35	126,778.42	Total stock .....	\$249,558,418.44	\$249,558,418.44
Sinking funds .....	562.83	1,391.40	GOVERNMENTAL GRANTS		
Deposits in lieu of mortgaged property sold.	50,698.48	39,294.62	Grants in aid of construction.....	\$372,189.02	\$335,138.12
Miscellaneous physical property.....	3,773,536.90	3,668,659.95	LONG-TERM DEBT		
Investments in affiliated companies:			Funded debt unmatured.....	\$392,233,209.09	\$375,246,509.09
Stocks .....	\$189,946,897.29	\$184,710,834.36	Less—Held by or for carrier.....	76,150,393.93	76,150,393.93
Bonds .....	26,818,600.50	26,818,600.50		\$316,082,815.16	\$299,096,115.16
Notes .....	1,664,016.43	1,675,516.43	Nonnegotiable debt to affiliated companies...	1,994,614.11	533,786.20
Advances .....	14,470,274.78	18,331,336.00	Total long-term debt.....	\$318,077,429.27	\$299,629,901.36
	\$232,899,789.00	\$231,536,287.29	CURRENT LIABILITIES		
Other investments:			Loans and bills payable.....	\$6,500,000.00	\$11,500,000.00
Stocks .....	\$1,282,023.93	\$1,282,023.93	Traffic and car-service balances payable....	865,341.73	822,669.93
Bonds .....	2,115,080.00	2,079,180.00	Audited accounts and wages payable.....	6,431,762.11	5,851,868.27
Notes .....	54,037.63	564,037.63	Miscellaneous accounts payable.....	766,846.61	15,581,694.63
Advances .....	91,163.55	88,948.72	Interest matured unpaid.....	7,982,540.86	7,605,476.95
Miscellaneous .....	1,765,209.14	1,926,313.69	Dividends matured unpaid.....	33,373.00	24,231.25
	\$5,307,514.25	\$5,940,503.97	Funded debt matured unpaid.....	6,500.00	1,200.00
Total investments .....	\$702,079,174.94	\$702,853,003.77	Unmatured interest accrued .....	450,689.09	479,225.67
CURRENT ASSETS			Other current liabilities.....	122,099.92	162,611.41
Cash .....	\$19,146,107.76	\$17,581,995.61	Total current liabilities.....	\$23,159,153.32	\$42,028,978.11
Demand loans and deposits .....	35,000.00	35,000.00	DEFERRED LIABILITIES		
Time drafts and deposits.....	6,040,000.00	755,000.00	U. S. Government deferred liabilities.....		\$11.60
Special deposits .....	7,274,189.88	9,595,007.32	Other deferred liabilities.....	\$12,061,457.29	11,254,966.84
Loans and bills receivable.....	48,290.44	24,492.55	Total deferred liabilities.....	\$12,061,457.29	\$11,254,978.44
Traffic and car-service balances receivable...	983,992.72	1,522,982.77	UNADJUSTED CREDITS		
Net balance receivable from agents and conductors .....	2,320,867.30	2,848,461.35	Tax liability .....	\$7,848,117.60	\$6,788,455.42
Miscellaneous accounts receivable.....	12,310,243.04	11,081,519.59	Insurance and casualty reserves.....	2,185,828.61	2,173,619.66
Material and supplies.....	9,799,070.29	11,050,760.07	Operating reserves .....	361,063.15	606,493.15
Interest and dividends receivable.....	59,768.83	86,895.69	Accrued depreciation—Road .....	2,370,359.46	2,353,882.61
Other current assets.....	71,348.94	100,429.21	Accrued depreciation—Equipment .....	29,561,739.00	31,958,766.22
Total current assets .....	\$58,088,879.20	\$54,682,544.16	Accrued depreciation—Miscellaneous physical property .....	20,238.04	14,571.87
DEFERRED ASSETS			Other unadjusted credits .....	9,089,372.29	5,769,753.70
Working fund advances.....	\$32,903.17	\$32,373.35	Total unadjusted credits.....	\$51,436,718.15	\$49,665,542.63
Other deferred assets.....	11,703,618.81	11,089,951.26	CORPORATE SURPLUS		
Total deferred assets .....	\$11,736,521.98	\$11,122,324.61	Additions to property through income and surplus .....	\$37,009,555.94	\$37,051,514.29
UNADJUSTED DEBITS			Funded debt retired through income and surplus .....	1,527,231.14	1,485,857.14
Rents & insurance premiums paid in advance	\$68,969.16	\$89,457.52	Sinking fund reserves .....	13,640.66	13,448.28
Discount on funded debt.....	4,529,584.56	3,027,152.78	Appropriated surplus not specifically invested	1,864,138.08	1,538,665.01
Other unadjusted debits.....	10,296,360.51	7,095,638.35	Total appropriated surplus .....	\$40,414,565.82	\$40,089,484.72
Total unadjusted debits.....	\$14,894,914.23	\$10,162,248.65	Profit and loss .....	91,719,559.04	86,257,679.37
Grand total .....	\$786,799,490.35	\$778,820,121.19	Total corporate surplus .....	\$132,134,124.86	\$126,347,164.09
[ADVERTISEMENT]			Grand Total .....	\$786,799,490.35	\$778,820,121.19



ana; new water treating plants at Benson, Morris, and Herman, Minnesota; automatic train control, Minot to Williston, North Dakota; automatic block signals, 283 miles in Montana; revisions of main line at Kipp and east and west of Durham, Montana; electrification of line between Tye and Skykomish, Washington; 7,100 lineal feet of new steel and concrete bridges; reinforcing 2,100 lineal feet of steel bridges; and new terminal post office at Spokane, Washington.

Respectfully submitted  
RALPH BUDD,  
President.

### Income Account

Item	1924	1923	Increase— Decrease—D
Average mileage of road operated .....	8,251.44	8,254.21 D	2.77
Operating Income:			
Railway operating revenues —(see page 23).....	\$110,243,104.02	\$120,077,771.56 D	\$9,834,667.54
Railway operating expenses —(see page 25).....	75,212,058.42	86,750,523.12 D	11,538,464.70
Net revenue from railway operations .....	\$35,031,045.60	\$33,327,248.44 I	\$1,703,797.16
Railway tax accruals.....	10,257,741.30	9,113,226.60 I	1,144,514.70
Uncollectible ry. revenues..	12,266.99	20,981.83 D	8,714.84
Ry. operating income....	\$24,761,037.31	\$24,193,040.01 I	\$567,997.30
Equipment rents—net debit.	304,268.75	Cr. 806,630.81 I	1,110,899.56
Joint facility rents—net debit	255,481.42	267,679.11 D	12,197.69
Net ry. operating income..	\$24,201,287.14	\$24,731,991.71 D	\$530,704.57
Nonoperating income			
Income from lease of road..	\$35,542.66	\$1,458.58 I	\$34,084.08
Miscellaneous rent income..	508,119.18	512,659.19 D	4,540.01
Miscellaneous nonoperating physical property .....	24,666.19	58,025.59 D	33,359.40
Dividend income .....	9,287,584.26	8,403,519.37 I	884,064.89
Income from funded securities .....	1,137,522.83	552,287.05 I	585,235.78
Income from unfunded securities and accounts.....	459,540.91	440,670.33 I	18,870.58
Miscellaneous income .....	200,901.40	344,640.66 D	143,739.26
Total nonoperating income	\$11,653,877.43	\$10,313,260.77 I	\$1,340,616.66
Gross income .....	\$35,855,164.57	\$35,045,252.48 I	\$809,912.09
Deductions from gross income:			
Rent for leased roads.....	\$123,323.65	\$116,622.98 I	\$6,700.67
Miscellaneous rents .....	9,727.36	16,301.18 D	6,573.82
Miscellaneous tax accruals	80,457.76	100,837.28 D	20,379.52
Interest on funded debt...	17,187,796.81	16,348,338.68 I	839,458.13

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Item	1924	1923	Decrease— Increase—D
Interest on unfunded debt..	182,257.21	212,483.40 D	30,226.19
Amortization of discount on funded debt.....	202,737.27	123,495.04 I	79,242.23
Miscellaneous income charges	127,264.20	59,226.46 I	68,037.74
Total deductions from gross income.....	\$17,913,564.26	\$16,977,305.02 I	\$936,259.24
Net income .....	\$17,941,600.31	\$18,067,947.46 D	\$126,347.15
Disposition of net income:			
Income applied to sinking and other reserve funds..	\$8,284.86	\$11,122.88 D	\$2,838.02
Dividend appropriations of income .....	12,473,617.50	12,473,605.00 I	12.50
Total appropriations of income .....	\$12,481,902.36	\$12,484,727.88 D	\$2,825.52
Balance .....	\$5,459,697.95	\$5,583,219.58 D	\$123,521.63
*Income from funded securities. Eliminating from this account the interest on S. P. & S. Ry. Co.'s bonds (accrued in 1921), still unpaid .....	.....	Dr. 5,227,721.36 I	5,227,721.36
Income balance transferred to Profit and Loss.....	\$5,459,697.95	\$355,498.22 I	\$5,104,199.73

\*The charge of \$5,227,721.36 to "Income from funded securities" should not be considered in determining the amount earned by the Company during the year 1923, as it is solely a book adjustment having no effect on the cash account. The net income earned during the year was \$18,067,947, which is a return of 7.24 per cent. on the outstanding capital stock.

### Profit and Loss Account

December 31, 1924.

DEBIT ITEMS	
Unrefundable overcharges .....	\$1,182.13
Surplus applied to sinking and other reserve funds.....	13,590.17
Surplus appropriated for investment in physical property.....	318,359.25
Debt discount extinguished through surplus.....	2,695.50
Loss on retired road and equipment.....	163,075.22
Miscellaneous debits .....	122,566.40
Credit balance December 31, 1924.....	91,719,559.04
	\$92,341,027.71
CREDIT ITEMS	
Credit balance December 31, 1923.....	\$86,257,679.37
Credit balance transferred from income (see page 14).....	5,459,697.95
Profit on road and equipment sold.....	116,693.11
Donations .....	110,806.86
Miscellaneous credits .....	396,150.42
	\$92,341,027.71

## Railway Financial News

(Continued from page 291)

**GULF, COLORADO & SANTA FE.—Bonds.**—The Interstate Commerce Commission has granted authority to issue one registered general-mortgage 6 per cent gold bond, series A, \$17,000,000; to be delivered to the Atchison, Topeka & Santa Fe in satisfaction of indebtedness.

**HELENA SOUTHWESTERN.—Authorized to Operate Line.**—The Helena Southwestern has been authorized by the Interstate Commerce Commission to operate its line from West Helena, Ark., to Glen Mary, 2 miles, thence over the tracks of the Missouri Pacific to Somerset, Tensas Parish, La., and over branch lines owned by the Chicago Mill & Lumber Company, connecting with the Missouri Pacific in East Carroll, Madison and Tensas Parishes, La.

**HIGH POINT, THOMASVILLE & DENTON.—Renewal of Notes.**—The Interstate Commerce Commission has granted authority to this company to renew and discount at 6 per cent, seven promissory notes aggregating \$200,000.

**ILLINOIS TERMINAL.—Excess Income.**—The Interstate Commerce Commission has announced a hearing at Washington on September 21 on this company's excess income reports.

**JONESBORO, LAKE CITY & EASTERN.—Final Valuation.**—The Interstate Commerce Commission has issued a final valuation report finding the final value for rate-making purposes of the property owned and used for common-carrier purposes, as of 1916, to be \$1,117,328.

**KANSAS SOUTHWESTERN.—Tentative Valuation.**—The Interstate Commerce Commission has served a tentative valuation report

placing the final value for rate-making purposes of the used property at \$739,376, as of June 30, 1916.

**MANISTEE & NORTH-EASTERN.—Authorized to Abandon Branch.**—Interstate Commerce Commission has granted a certificate to this company to abandon its Manistee River branch from River Junction, Mich., to Grayling, approximately 77 miles. In its application the road asked authority to abandon its entire line extending from Manistee to Traverse City with branches to Onkama and to Provemont as well as to Grayling, a total of 183 miles. It also asked authority to abandon the road of the Leelanau Transit Company operated under lease, which extends from Hatchs to Northport, but the other parts of the application were denied. It was testified that the road was in poor physical condition and that it was being operated at a loss. The company, at the present time, operates a passenger train each way a day between Manistee and Traverse City, between Northport and Traverse City and between Provemont and Traverse City, but freight service only on the Manistee River branch.

**To Reorganize.**—Negotiations for the sale of the property of Manistee & North-Eastern to the Wabash having failed, the company will be reorganized at once according to S. J. Scott, general manager for the receiver.

**MINNEAPOLIS & ST. LOUIS.—Branch Line Abandonment.**—The receiver has been authorized by the Interstate Commerce Commission to abandon 10.46 miles of branch line from Van Cleve to State Center, Marshall County, Iowa. This line was built by the Grinnell & Montezuma and was acquired by the Minneapolis & St. Louis in 1912. The territory adjacent to the line was shown to be served by other railroads and highways.

**MINNEAPOLIS & ST. LOUIS.—Refunding.**—The company has been authorized by the Interstate Commerce Commission to issue a receiver's certificate for \$200,000 bearing 7 per cent interest to refund a 5 per cent certificate for the same amount.

MINNEAPOLIS & ST. LOUIS.—1924 Earnings.—Annual report for 1924 shows condensed income account as follows:

	1924	1923	Increase or Decrease
Average miles of road operated.....	1,647	1,650	2.64
TRANSPORTATION OPERATIONS:			
Gross operating revenues.....	\$15,097,126	\$16,524,961	—\$1,427,835
Operating expenses.....	14,546,992	14,288,791	258,201
Taxes (other than U. S. Government).....	727,716	788,757	—61,041
Total.....	\$15,274,708	\$15,077,548	\$197,160
Operating revenues over expenses and taxes.....	\$177,582	\$1,447,412	—\$1,624,994
INCOME OTHER THAN FROM TRANSPORTATION OPERATIONS:			
Dividends on stock owned.....	24,144	84,144	—60,000
Net rentals from lease of road, terminals and other facilities.....	130,941	94,051	36,890
Total.....	\$155,085	\$178,195	—\$23,110
Surplus.....	\$22,497	\$1,625,607	—\$1,648,104
FIXED AND OTHER CHARGES:			
Hire of equipment—balance.....	\$672,619	\$494,862	\$177,757
Interest on outstanding funded debt.....	2,079,994	2,126,620	—46,626
Total fixed and other charges.....	2,973,894	2,837,712	136,182
Balance.....	Def. 2,996,391	Def. 1,212,105	—1,784,286

NORFOLK & WESTERN.—*Acquisition*.—This company's application to acquire control by lease of the Virginian Railway will be heard September 16 at Washington before Examiner Davis.

RIO GRANDE, EL PASO & SANTA FE.—*Valuation*.—The Interstate Commerce Commission has served a tentative valuation report placing the final value for rate-making purposes of the property owned and used at \$1,685,000, as of June 30, 1916.

ROCK ISLAND RAILWAY.—*Bonds*.—This carrier has been authorized by the Interstate Commerce Commission to sell \$1,000,000 of first and refunding 4 per cent mortgage gold bonds at not less than 84.5 per cent of par, the proceeds to be used for general corporate purposes.

SALT LAKE & LOS ANGELES.—*Valuation*.—The Interstate Commerce Commission has served a final report of valuation placing the value of the owned and used property of the Salt Lake & Los Angeles Railway for rate-making purposes at \$315,391, as of June 30, 1916.

SEABOARD AIR LINE.—*Bonds*.—Dillon, Read & Co., Ladenburg, Thalmann & Co. and Kissel, Kinnicutt & Co., have sold at 98½ and interest to yield over 6.20 per cent, \$25,000,000 Seaboard-All Florida Railway first mortgage 6 per cent bonds series A, to be dated August 1, 1925, and maturing August 1, 1935.

"These bonds will be secured by direct first mortgage liens to the aggregate principal amount of the bonds on a total of approximately 468 miles of main lines of Seaboard-All Florida Railway, Florida Western & Northern and East & West Coast Railway, all three of which companies will join in the bonds and mortgage. Included in this 468 miles of line are 204 miles of Florida Western & Northern and 47 miles of East & West Coast, all now in operation, and a proposed extension on the east coast of Florida from West Palm Beach (Palm Beach) to Miami and other east coast points and a proposed extension of the main lines of the Seaboard Air Line System on the west coast through Fort Myers and beyond. The lines of these three companies, including those in operation and those to be constructed, will be leased to Seaboard Air Line. The extension to Miami and beyond will form an integral part of the main line of the Seaboard Air Line System, thus making it the only railroad system operating trains over its own rails from Richmond to Miami and other points on the east coast of Florida. In connection with the Tampa line of the Seaboard Air Line System, the lines of Florida Western & Northern form the only through line of railroad across the peninsula of Florida connecting the two coasts.

"These bonds will be further secured by pledge of the lessor's interest in the lease or leases to Seaboard Air Line of the lines of Seaboard-All Florida Railway, Florida Western & Northern and East & West Coast Railway. The bonds will also be secured by pledge of the entire capital stocks of each of the three last named companies. The routes of the proposed extensions and the number of miles to be constructed are subject to such change as may arise in connection with any necessary approval by the Interstate Commerce Commission and/or as may be approved by Dillon, Read & Co. Seaboard Air Line will obligate itself to provide any funds in addition to the proceeds of these \$25,000,000 Series A bonds required to subject to the first mortgage liens the properties proposed presently to be subjected thereto except that for this purpose additional Series A bonds up to \$1,000,000 may be issued.

"Bonds in addition to the \$25,000,000 Series A bonds (and to the above \$1,000,000 Series A bonds) may be issued in one or more other series in principal amount not to exceed the reasonable cost of additions, extensions and betterments, to be subjected to the mortgage as a first lien thereon, made subsequent to July 31, 1925.

"Seaboard Air Line will lease the mortgaged lines for at least 50 years from August 1, 1925, at a minimum annual net rental, upon completion of construction, after maintenance charges, taxes, etc., equal to annual interest on the bonds outstanding under the mortgage. Seaboard Air Line will unconditionally guarantee the bonds as to principal and interest by endorsement on each bond.

"It is estimated that the freight and passenger business of the mortgaged lines will increase the annual gross revenues of the Seaboard Air Line system by \$10,000,000, and its net operating revenue by approximately \$4,500,000, after the first year of full operations. This estimate of net revenue takes into consideration the character of the freight and that the additional expense incurred by the Seaboard Air Line on traffic interchanged with the mortgaged lines will be comparatively small.

"The proceeds of the sale of these bonds will be deposited with the corporate trustee under the mortgage and will be drawn down in accordance with appropriate restrictions in the mortgage to redeem the entire outstanding \$7,000,000 Florida Western & Northern Railroad Company first mortgage sinking fund 7 per cent gold bonds and \$525,000 East & West Coast Railway first mortgage 6 per cent gold bonds to acquire and/or to make reimbursements for the cost of acquiring certain property for Florida Western & Northern, to repay advances made to, or for the account of, the latter by Seaboard Air Line or otherwise, to provide funds for the construction of the proposed extensions to Miami and points on the east coast and on the west coast to Ft. Myers and beyond, and for additional capital expenditures in connection with the completion and extension of Seaboard-All Florida Railway, Florida Western & Northern and East & West Coast."

Atlantic Coast Line Denies Opposition.—Lyman Delano, executive vice-president of the Atlantic Coast Line has issued a statement denying that his road has made any protest against the extension of the Seaboard Air Line into Ft. Myers, Fla. Mr. Delano's statement said in part:

"The Atlantic Coast Line has not protested against any extension of the Seaboard Air Line into Fort Myers, Fla. In March, 1917, the Fort Myers Southern was chartered for the construction of a road from Fort Myers, Fla., southwest via Estero, Bonita Springs, and Naples to Marco. Construction was begun and the road was completed from Fort Myers to Bonita Springs in June of this year.

"Under date of June 13, 1925, the Atlantic Coast Line received a questionnaire from the Interstate Commerce Commission in connection with the application of the Naples, Seaboard & Gulf for the construction of a railroad from Naples, Fla., to Estero, Fla. The map filed with this application shows that this road would parallel that part of the Fort Myers Southern already constructed and now under construction between Naples and Estero.

"One of the purposes of the Transportation Act was to prevent duplication of unnecessary facilities and to protect the capital invested in already existing facilities. The construction of the Naples, Seaboard & Gulf shown on the map filed with the Interstate Commerce Commission would develop no new territory and would be parallel to and in direct competition with the Fort Myers Southern now being constructed and not yet self-supporting."

SOUTHERN.—*Abandonment*.—This company has applied to the Interstate Commerce Commission for authority to abandon its line from White Oak, Va., to Danville, 8.37 miles.

ST. LOUIS-SAN FRANCISCO.—*Acquisition*.—The company has applied to the Interstate Commerce Commission for authority to acquire control of the Muscle Shoals, Birmingham & Pensacola by purchase of its capital stock amounting to \$2,500,000. The latter company has been organized to construct or purchase and operate a line from Pensacola, Fla., to Muscle Shoals, Ala.

VIRGINIAN TERMINAL.—*Bonds*.—The Interstate Commerce Commission has granted authority to the Virginian Terminal Railroad Company to issue \$492,000 first-mortgage 5 per cent 50-year bonds to be delivered to the Virginian in payment for advances. The Virginian has been granted authority to assume obligation and liability as guarantor with respect to these bonds, to pledge them with the trustee of its first mortgage entered May 1, 1912, in addition to which the Virginian has been granted authority to procure the authentication and delivery of \$492,000 first-mortgage 5 per cent 50-year bonds.

WABASH.—*Acquisition*.—This company's application to the Interstate Commerce Commission to acquire control of the Ann Arbor Railroad by purchase of capital stock has been assigned for hearing September 2, at Washington, before Examiner Davis.

### Dividends Declared

Cleveland & Pittsburgh.—Regular guaranteed, \$.87½, quarterly; special guaranteed betterment stock, \$.50, quarterly; both payable September 1 to holders of record August 10.

New Orleans, Texas & Mexico.—Preferred, \$1.75, quarterly, payable, September 1 to holders of record August 15.

New York, Chicago & St. Louis.—Common and preferred, 1½ per cent, quarterly, both payable October 1 to holders of record August 15.

### Trend of Railway Stock and Bond Prices

	Aug. 4	Last Week	Last Year
Average price of 20 representative railway stocks.....	83.63	83.02	71.16
Average price of 20 representative railway bonds.....	90.03	90.54	88.73



## Railway Officers

### Executive

**A. E. Wallace**, general manager of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has been appointed vice-president and general manager. **R. E. Davies** has been appointed assistant to the president, with headquarters at Minneapolis, a newly created position.

**J. B. Ford**, freight traffic manager of the Erie, with headquarters at New York, has been elected vice-president in charge of traffic of the Chicago & Eastern Illinois, with head-



J. B. Ford

quarters at Chicago, succeeding **T. O. Jennings**, who has been appointed assistant to the president. Mr. Ford entered railway service in November, 1898, as a clerk in the freight department of the Southern. He was promoted to stenographer to the division freight agent, and export clerk in January, 1900, and in January of the following year was promoted to chief clerk in the commercial office at Savannah, Ga. He was appointed rate clerk in the office of the assistant freight traffic manager at Louisville, Ky., in March, 1902, and was promoted to chief clerk to the assistant general freight agent in February, 1905. Mr. Ford was promoted to chief clerk to the assistant freight traffic manager in June, 1906, and held that position until April, 1910, when he was promoted to chief clerk to the vice-president. He was promoted to assistant general freight agent of the Cincinnati, New Orleans & Texas Pacific, now a part of the Southern, in May, 1912, where he remained until January, 1917, when he was promoted to general freight agent of the Southern at Cincinnati. Mr. Ford entered the service of the Erie in March, 1920, as freight traffic manager, with headquarters at Chicago. He was later transferred to New York.

### Traffic

**E. W. Ireland**, city passenger agent of the Chicago Great Western at Chicago, has been promoted to general agent, passenger department, with the same headquarters, a newly created position.

**E. E. Nash**, chief operating officer of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., has been given extended jurisdiction to include the traffic department, **F. B. Townsend**, chief traffic officer, having resigned.

**W. E. Briggs**, chief clerk in the traffic department of the Southern Pacific, Lines in Texas and Louisiana, at Houston, Texas, has been promoted to assistant general freight and passenger agent, with headquarters at Dallas, Texas, succeeding **H. J. Fitzgerald**, who died on May 26.

**C. L. Kennedy**, who has been promoted to general northwestern freight agent of the Chicago, Milwaukee & St. Paul, with headquarters at Minneapolis, Minn., entered railway service in 1893 in the freight department of the Chicago, Milwaukee & St. Paul. He successively held the positions of local agent, soliciting freight agent, traveling freight agent, commercial agent and division freight agent and was finally

promoted to assistant general freight agent, with headquarters at Minneapolis. He held that position until his recent promotion to general northwestern freight agent.

**Alfred J. Ball**, foreign freight agent of the Pennsylvania, who has been promoted to general freight agent at Philadelphia, was born in Philadelphia in 1882, and entered the service



A. J. Ball

of the Pennsylvania in 1900, starting as a stenographer in the office of the Empire Line. He was subsequently freight solicitor and then agent of the Empire Line in the Philadelphia district, and on July 1, 1915, was promoted to Eastern superintendent of the Empire Line. On June 1, 1916, he became foreign freight agent of the Pennsylvania, Lines East of Pittsburgh and Erie, and during the period of federal control he served as a member of the export committee, subsequently designated the freight traffic

committee, of the United States Railroad Administration. He was later traffic control manager at the Port of Philadelphia. Upon the termination of federal control he continued the duties of foreign freight agent under the company's own management.

**C. T. Mackenson, Jr.**, general freight agent of the Pennsylvania, with headquarters at Pittsburgh, Pa., who has been promoted to freight traffic manager, with headquarters at



C. T. Mackenson, Jr.

Philadelphia, Pa., was born on June 16, 1886, at Harrisburg, Pa., and entered the freight department of the Cumberland Valley, then a subsidiary of the Pennsylvania, in 1903. He was subsequently claim clerk, rate clerk and chief clerk. He was transferred to the New Jersey division of the Pennsylvania in 1912, and two years later was transferred to the office of the general freight agent as chief rate clerk. He became division freight agent at Altoona, Pa., in 1916, and the following year was furloughed for military service. In 1919 he resumed his active duties at Pittsburgh. He was later division freight agent at Uniontown, Pa., and at Pittsburgh, and was promoted to assistant general freight agent of the Central region in August, 1921. In July, 1924, he was promoted to general freight agent, which position he held at the time of his recent promotion.

**H. C. Oliver**, division freight agent of the Pennsylvania at Toledo, Ohio, who has been promoted to general freight agent at Pittsburgh, Pa., succeeding C. T. Mackenson, Jr., was born in 1886, at Shreve, Ohio, and entered the service of the Pennsylvania in 1902, serving in the engineering corps and in the general freight office at Pittsburgh. He was furloughed in 1917 for military service; was commissioned captain of infantry, and served 16 months in France, remaining in the Officer's Reserve Corps with the rank of major of infantry. He re-entered the railroad service at Pittsburgh in 1919, and

on March 1, 1920, was appointed division freight agent at Richmond, Ind. On August 1, 1921, he became division freight agent at Toledo, Ohio, which position he held at the time of his recent promotion to general freight agent at Pittsburgh.

**J. A. Lucey**, freight claim agent of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., has been promoted to passenger traffic manager, with the same headquarters, succeeding **A. B. Cutts**, retired. **W. B. Wells**, assistant superintendent of the Eastern division, with headquarters at Marshalltown, Iowa, has been promoted to freight claim agent, with headquarters at Minneapolis, in place of Mr. Lucey.

### Operating

**H. J. Arnett** has been appointed district manager of District No. 14 of the Car Service Division of the American Railway Association, with headquarters at Seattle, Wash.

**T. T. Turner**, chief clerk of the dining car service department of the Missouri-Kansas-Texas, has been promoted to superintendent of dining service, with headquarters at Kansas City, Kan., succeeding **C. O. Johnson**, deceased.

**C. M. Murphy**, who has been promoted to superintendent of the New Mexico division of the Southern Pacific, with headquarters at El Paso, Tex., was born on July 13, 1879, at Dixon, Ill., and entered railway service in 1897 as a switchman and brakeman on the Chicago & North Western at Chicago. He was employed in a similar capacity on the Southern Pacific at El Paso in August, 1900, and was promoted to conductor in August, 1904. Mr. Murphy was promoted to trainmaster of the Tucson division in October, 1909. In 1916 he was appointed representative of the American Railway Association of Nogales, Ariz., handling National Guard troops on the border. Being a reserve officer, Mr. Murphy was called into military service in May, 1917. He was discharged in June, 1919, after serving 11 months overseas as a major in the Engineering Corps. He returned to the service of the Southern Pacific in July, 1919, as a trainmaster on the Coast division, and was transferred to the Los Angeles division in January, 1920. He was promoted to assistant superintendent of the Los Angeles division in October, 1921, where he remained until his recent promotion to superintendent of the New Mexico division.

**O. O. Hawk**, has been appointed acting trainmaster of the Cedar Rapids-Minnesota division of the Chicago, Rock Island & Pacific, with headquarters at Cedar Rapids, Ia., succeeding **W. H. Leonard**, who has been appointed supervisor of passenger train service.

### Mechanical

**A. R. Cole**, master mechanic of the El Paso-Amarillo division of the Chicago, Rock Island & Pacific, with headquarters at Dalhart, Tex., has been transferred to the Oklahoma-Southern division, with headquarters at Chickasha, Okla., succeeding **A. R. Ruiter**, who has been transferred to the shops at Armourdale, Kan. **A. Hambleton**, general foreman of the locomotive shops at Shawnee, Okla., has been promoted to master mechanic of the El Paso-Amarillo division, in place of Mr. Cole.



C. M. Murphy

### Engineering, Maintenance of Way and Signaling

**C. A. Taylor** has been appointed assistant superintendent of signals of the Chesapeake & Ohio, with headquarters at Richmond, Va., and the position of signal engineer has been abolished.

**E. M. Grime**, supervisor of bridges and buildings of the Fargo division of the Northern Pacific, with headquarters at Fargo, N. D., has been promoted to engineer of water service, with headquarters at St. Paul, Minn., a newly created position.

**I. D. Waterman**, who has been promoted to assistant chief engineer of the New York, New Haven & Hartford and the Central New England, was born on February 18, 1879, at South Weymouth, Mass. He was educated at Lowell Institute and also took a Y. M. C. A. course in engineering. Mr. Waterman entered railway service in September, 1899, as axman and rodman on the Boston & Albany, which position he held until May, 1902, when he became instrumentman of the same road. From May, 1903, until January, 1904, he was resident engineer of the Canadian Pacific, and from February, 1904, to September, 1905, he was transitman of the New York, New Haven & Hartford. In September, 1905, he became assistant engineer of the same road, and remained in this position until June, 1907, when he was promoted to second assistant engineer of construction. From October, 1907, to May, 1912, he was assistant engineer of construction, and from May, 1912, to 1923, he held the position of engineer of construction of the same road. In 1923, he was promoted to assistant to the chief engineer, which position he held at the time of his recent promotion.

### Purchasing and Stores

**M. E. Baile** has been appointed district storekeeper of the Missouri Pacific, with headquarters at Kansas City, Mo., a newly created position.

**Joseph V. Miller** has been appointed assistant general storekeeper of the Chicago, Milwaukee & St. Paul. He was formerly western sales representative of the Prime Manufacturing Company, Milwaukee, Wis.

**B. T. Adams**, division storekeeper on the Illinois Central, with headquarters at Paducah, Ky., has been promoted to assistant general storekeeper of the Southern lines, the Yazoo & Mississippi Valley and the Gulf & Ship Island, with headquarters at Memphis, Tenn., succeeding **W. D. Stokes**, deceased. **J. G. Warnecke**, division storekeeper at Centralia, Ill., has been transferred to Paducah, succeeding Mr. Adams. **A. E. Walters**, division storekeeper at Mattoon, Ill., has been transferred to Centralia, Ill., succeeding Mr. Warnecke. **R. J. Gable** has been appointed division storekeeper at Mattoon, Ill., in place of Mr. Walters. **G. B. Hopkins** has been appointed division storekeeper on the Gulf & Ship Island, with headquarters at Gulfport, Miss.

### Special

**J. D. White**, safety agent of the Illinois Central, with headquarters at Chicago, has been appointed superintendent of safety, with the same headquarters. **J. W. Dodge** has been appointed superintendent of fuel conservation, with headquarters at Chicago. Both of these are newly created positions.

### Obituary

**D. R. Cameron**, formerly assistant auditor of the Denver & Rio Grande Western, died recently at San Francisco, Cal.

**H. E. Correll**, formerly superintendent of the St. Louis-Kansas City division of the Chicago, Rock Island & Pacific, died at Chickasha, Okla., on August 2.

**F. D. Kilpatrick**, member of the firm of pioneer railroad builders, Kilpatrick Brothers, which constructed a large part of the line of the Union Pacific, Central Pacific and Oregon Short Line, died on July 18 at Beatrice, Neb.